The Journal of

THE AMERICAN DIETETIC ASSOCIATION

VOL. II SEPTEMBER, 1926 NO. 2

CONTENTS

The Composition of Peanut Meal and Its Use as a Diabetic Food
Margaret Mumford Neal, M.S.

A Nutrition Worker in the Hospital
Helen Hubbell

Food Fads
Mary Pascoe Huddleson

Some Effects of Diet on the Biliary Tract
Glover H. Copher, M.D.

Published Quarterly by
THE AMERICAN DIETETIC ASSOCIATION
MT. ROYAL AND GUILFORD AVENUES
BALTIMORE, MD.

Entered as second-class matter June 30, 1925, at the Post Office at Baltimore, Md., under the act of August 24, 1912

THE DIETITIAN *specifies:*

"Mission Orange juice has been a life-saver in my work."

NO WONDER dietitians are so enthusiastic over Mission Orange juice. No more shopping for oranges out of season; no more variation between sweet and sour, juicy and dry, or large and small oranges; no more muss and waste squeezing the oranges by hand.

Mission orange juice is absolutely uniform from January to December—just the juice of ripe California oranges, sweetened to taste and "cold packed" in gallon glass jugs for institutional use—always ready, always good.

Scores of hospitals are using Mission Orange juice, are you? Our distributor near you will be glad to serve you.

CALIFORNIA CRUSHED FRUIT CORPORATION
LOS ANGELES

Mission Orange
It's Real Juice

Vol. 2, No. 2 SEPTEMBER, 1926

The Journal of

The American Dietetic Association

THE COMPOSITION OF PEANUT MEAL AND ITS USE AS A DIABETIC FOOD[1]

MARGARET KENNEDY MUMFORD NEALE

The purpose of this thesis is to study the value of peanut meal as a food for diabetics. Detailed analyses of the meal, especially of the carbohydrate, are included, and also recipes for various foods made from it with discussion of the amount of carbohydrate available from them.

The use of peanuts for human consumption was confined until the recent war almost entirely to peanut butter, salted peanuts, and candy making, although their use for stock food had been encouraged for some time. When the shortage of wheat became alarming, peanuts and peanut products were investigated to determine their value as a substitute for wheat in bread making.

Most substitutes for wheat in bread making are too high in carbohydrate to be of use in a diabetic diet so that, up to the present time, the soy bean has been the chief product available for use with wheat in making bread for diabetics. The fact that the soy bean is a legume suggests that other legumes might be of much value also in treatment of diabetes—particularly the peanut. In general composition the soy bean and "Choice Peanut Meal" are somewhat similar, but peanuts and peanut products as a constituent of diabetic diets have not heretofore been considered of sufficient importance to warrant mention in recent literature of the subject.

REVIEW OF LITERATURE

There has, however, been considerable investigation of peanuts and peanut products, particularly by Fraps (1) of the Texas Agricultural

[1] Submitted to the Faculty of the Ogden Graduate School of Science in Candidacy for the degree of Master of Science, Department of Home Economics, University of Chicago, 1920

Experiment Station, from the standpoint of their use as stock food. He has made proximate analyses of peanut kernels and peanut hulls. Table 1 is compiled from his results. These analyses show that although there is considerable variation in the composition of peanuts, protein and ether extract are always high and nitrogen-free extract low—a composition favorable to their use by diabetics.

Fraps has also investigated the composition of peanut press cake and meal. Peanut press cake is the residue left after fat has been expressed from peanuts. It may be made from the whole peanut including the outer hull, the red inner hull, the kernel, the stem and adhering dirt. The best grades, however, are made from the clean peanut kernel only. Peanut meal is the ground product of the press cake. The former type of press cake is used for stock food while the latter type which is usually

TABLE 1

Composition of peanut hulls and kernels

	PROTEIN	ETHER EXTRACT	CRUDE FIBER	N FREE EXTRACT	WATER	ASH
	per cent	*per cent*	*per cent*	*per cent*	*per cent*	*per cent*
Kernels:						
Average of 75 analyses	29.45	48.89	2.67	11.87	4.88	2.24
Range of 75 analyses	24–35	44–54	2–4	6–16	4–6	1–3
Hulls:						
Average of 50 analyses	6.76	1.10	60.83	19.64	7.48	4.19
Range of 50 anlayses	5–7	0.2–6.0	51–71	12–30	6–8	2–10

marketed as "Choice Peanut Meal" and "Prime Peanut Meal" is suitable for human consumption. The following standards were adopted by the Texas Feed Control in July, 1917:

"Choice Peanut Meal" is the product from the kernels of sound peanuts, free from excess of hulls and other foreign materials. It must be finely ground, of sweet odor, and must contain not less than 48 per cent of protein, not less than 7 per cent of fat, and not more than 9 per cent of crude fiber.

"Prime Peanut Meal" is the product from the kernels of sound peanuts, free from excess of huls and other foreign materials. It must be of sweet odor and contain not less than 45 per cent of protein, not less than 6 per cent of fat and not more than 14 pr cent of crude fiber.

Peanut meals are thus graded according to their protein, fat and crude fiber content, the better grades having more protein and fat and less crude fiber. "Choice Peanut Meal" is the product of a better grade of peanuts than "Prime Peanut Meal."

It is interesting at this point to compare a proximate analysis of the soy bean, made by Street (6) with analyses of different grades of peanut meal made by Fraps (see table 2). According to these analyses, "Choice Peanut Meal" is somewhat higher in protein and crude fiber, but lower in ether-extract and nitrogen-free extract, than is the soy bean.

The proteins of the peanut are of excellent quality, being much superior to most other vegetable proteins. Johns and Jones (2) have studied the composition of the peanut protein and have isolated an albumen and two globulins. The latter they have named arachin and conarachin. The amino acid content of arachin and conarachin is reported in table 3.

TABLE 2

Composition of different grades of peanut meal (1) compared with the soy bean

	PROTEIN	ETHER EXTRACT	CRUDE FIBER	N FREE EXTRACT	WATER	ASH
	per cent	*per cent*	*per cent*	*per cent*	*per cent*	*per cent*
Peanut meal, high grade	50.87	7.45	7.06	21.67	7.67	5.28
Peanut meal, medium grade	44.91	8.84	12.08	23.05	6.22	4.83
Soy bean	38.29	14.89	4.64	26.64	10.00	5.54

TABLE 3

The composition of the globulins of the peanut

AMINO ACID	CONARACHIN	ARACHIN
	per cent	*per cent*
Arginine	14.60	13.5
Histidine	1.85	1.88
Lysine	6.04	4.98
Cystine	1.07	0.85

It is evident from this analysis that the globulins of the peanut are relatively high in certain of the important amino acids.

In a biological analysis of peanut meal, using white rats as subjects, Daniels and Loughlin (3) found that from a ration supplying 18 per cent of protein, all from peanut in the form of peanut meal, normal growth and reproduction were obtained. In addition they found that peanut meal is low in fat-soluble A but relatively high in water-soluble B and that the inorganic constituents of peanut meal are superior to those of the soy bean, i.e., the former is higher in calcium, magnesium, potassium and sulphur.

Johns and Finks (4) working along the same line also using rats, fed a bread made of peanut meal and white flour. They found that a diet

containing bread from wheat flour (74 per cent extraction) when fed to albino rats as the only source of protein and water-soluble vitamine together with an adequate salt mixture and butter fat produced only one-third to two-thirds normal growth; that bread made with a mixture of 25 parts of peanut meal and 75 parts of wheat flour furnished adequate protein and water-soluble vitamine for normal growth; and that a similar bread containing 15 parts of peanut meal and 85 parts of wheat flour contained protein and water-soluble vitamine sufficient for growth at very nearly normal rate.

Not only are the proteins of the peanut of good quality, but the meal has a relatively high coefficient of digestibility. Holmes (5), using normal adult men as subjects, fed peanut meal in the form of biscuits in which 50 per cent of the flour was peanut meal and 50 per cent wheat flour. He found that the coefficient of digestibility of the protein of the peanut when ingested in this form was 86 per cent; of the carbohydrate 97.8 and 98 per cent, the former being the coefficient for cooked meal, the latter for uncooked. The roasting of the meal did not affect the coefficient of digestibility.

EXPERIMENTAL: PART 1

The meal used in the following experiments was furnished by Musher and Company, 140 Liberty Street, New York City. The company submitted the following analysis of their product: 26.5 per cent carbohydrate, 50.0 per cent protein, 9.0 to 10.0 per cent fat, 4.5 per cent ash, and 4.0 to 5.0 per cent crude fiber. In comparison with the standards of the Texas Feed Control this meal is "Choice Peanut Meal."

Determinations of moisture, ether extract, ash and protein

The writer determined the moisture, ether extract, ash and protein of the sample used, by the usual official methods (7). The results, agreeing closely with Musher's figures, are given in table 4.

Analysis of the carbohydrate content

The chief object of the present experiment was to determine the distribution of the carbohydrates in the nitrogen-free extract of Choice Peanut Meal. In a food to be used in a diabetic diet knowledge of the amount of the available carbohydrate is even more important than of the total carbohydrate. Starches and sugars as glucose-glycogen formers

are not burned in the abnormal metabolic condition in diabetes whereas carbohydrates such as hemicelluloses are not used by the body to form glycogen in spite of the fact that 70 to 80 per cent may disappear from the intestine. Because of this difference in the availability of carbohydrates, an analysis of the nitrogen-free extract of the meal was deemed necessary if the meal was to be of use in diabetic diets.

In this analysis of the carbohydrate of peanut meal the general methods which Street (6) employed in his analysis of the soy bean were used. The meal was first extracted with alcohol to separate the sugars, and the residue then hydrolyzed with saliva to determine the starch and dextrins; another sample was hydrolyzed with acid to determine the total carbohydrate. This was followed by the determination of the pentosans in the meal.

TABLE 4

Proximate analysis of peanut meal

	PER CENT
N × 6.25	51.56
Ether extract	10.50
Crude fiber (Musher & Co.)	4.50
N free extract (by difference)	22.95
Moisture*	6.50
Ash	3.99

* The moisture varied with the humidity of the atmosphere from 5.90 per cent, when the atmosphere was relatively free from humidity, to 7.21 per cent on a very damp day.

Reducing sugar and other alcohol-extracted substances

The sugars were separated by extracting the moisture-free, ether-extracted sample with 95 per cent boiling alcohol for 18 hours. Six extractions were made with results varying from 16.06 to 16.08 per cent of the peanut meal.

By this treatment probably all sugars were extracted, including levulose, dextrose, maltose, invert sugar, sucrose, and possibly, if present, some pentoses and raffinose. In this connection Street (6) in his discussion of the carbohydrates of the soy bean quotes Beilstein to the effect that though raffinose is less soluble in alcohol than the other sugars named, 1 gram is soluble in 1000 cc. of 90 per cent alcohol and it is freely soluble in 80 per cent alcohol. Sucrose is, of course, much more soluble, 0.9 part dissolving in 100 parts of 90 per cent alcohol at 14°C., and 1 part in 250 parts of cold 97 per cent alcohol. While raffinose is much less soluble in alcohol than

sucrose, it is somewhat soluble in boiling absolute alcohol and would therefore be more soluble in boiling 95 per cent alcohol. In view of the above facts it is estimated that practically all of the sugar in the peanut meal was removed by the alcohol extraction.

After this extraction was completed the amount of sugar in the extract was determined, the alcohol being evaporated off, the residue made up to 100 cc. with water, and 25 cc. hydrolyzed on a sand bath for 45 minutes with 15 cc. hydrochloric acid (specific gravity 1.06). The material was then filtered to remove any precipitate insoluble in acid, almost neutralized with sodium hydroxide and again made up to 100 cc. with water. The reducing sugar in 25 cc. of this solution was determined by a combination of the Munson-Walker and Bertrand (8) methods and calculated as dextrose. The four analyses made showed the presence of 3.49 per cent dextrose in the original sample.

This amount is only about a quarter of the total alcohol extract. Probably some waxes, since they are soluble in alcohol, and some nitrogen-containing compounds made up the residue. (A positive xanthoproteic test was secured.) Calculated on the basis of the original meal, the undetermined portion is 12.58 per cent, as opposed to 8.72 per cent undetermined in the total carbohydrate analyses (see below). The difference in the two undetermined portions may represent some nitrogen containing compounds which would be included also in the protein content of the meal. It is interesting at this point to note that Street left undetermined in his analysis of the soy bean a total of 8.6 per cent which he states is "waxes, tannins, etc."

Enzyme hydrolyzable carbohydrate

Because knowledge of the amount of enzyme-hydrolyzable carbohydrate is essential in a food to be used in a diabetic diet, the next procedure in the analyses was the determination of the amount of carbohydrate of peanut meal which is hydrolyzed by the enzymes of saliva.

The residue from the alcohol extraction was boiled in a reflux condenser for one and one-half hours to cook the starch. This was cooled, 10 cc. of filtered saliva (negative test with iodine) added, covered with a layer of toluol and allowed to digest at room temperature for 14 hours, when negative iodine indicated that all starch had been digested.

After the digestion was completed, the digested portion was filtered and made to a volume of 250 cc. Of this, 150 cc. was hydrolyzed for 45 minutes on a sand bath with 15 cc. hydrochloric acid (specific gravity

1.125), the volume made to 200 cc. and the reducing sugar determined as above. By this treatment peanut meal yields 3.19 per cent sugar calculated as dextrose, which represents the starches and dextrins present.

Acid hydrolyzable carbohydrate

The carbohydrates separated by extraction with alcohol and those digested with salivary enzymes represent only a part of the total carbohydrate content. In an acid hydrolysis of peanut meal which has been subjected to ether-alcohol extractions, in addition to those carbohydrates hydrolyzable by enzyme, insoluble hemicelluloses will be hydrolyzed. Thus the difference between the acid-hydrolyzable carbohydrate and the enzyme-hydrolyzable carbohydrate plus the sugars will represent the amount of insoluble, non-digestible carbohydrate present.

The residue from the ether and alcohol extractions was hydrolyzed, using 2 to 3-gram samples with 100 cc. water and 15 cc. hydrochloric acid (specific gravity 1.125) for two and one-half hours on a water bath. The solution was filtered, the filtrate almost neutralized with sodium hydroxide, made up to a volume of 300 cc. with water, and the reducing sugar determined as above. The reducing sugar obtained by this method was 10.96 per cent of the peanut meal, and represents the carbohydrate content of the meal with the exception of the sugars removed in the alcohol extraction. Adding the sugar and the acid hydrolyzable carbohydrate as determined above, a total of 14.45 per cent of the peanut meal is carbohydrate. This total is not all utilized by the body, which uses only monosaccharides, disaccharides and certain polysaccharides such as starches and dextrins. These sugars were extracted by alcohol and the polysaccharides were hydrolyzed by the enzymes of saliva. Hence the difference between the sum of these (6.68 per cent), and the total resulting from acid hydrolysis (14.45 per cent) would represent the amount of non-utilizable carbohydrates in the meal or 7.77 per cent.

Pentosan content

One form of insoluble carbohydrate which occurs in peanut meal is pentosan. A knowledge of the pentosans in foods which are to be used for diabetic patients is extremely valuable, for pentosan represents a form of carbohydrate which is not utilized by the human body to form glycogen. In the present analysis pentosans were determined by the usual official method (7). The meal contained 4.99 per cent pentosan.

This, however, probably does not represent the total pentosan content.

Fraps (10) in a series of analyses of feeds found that there was a destruction of from 7.25 to 11.2 per cent of the total pentosan content, by a treatment with acid similar to that used in the official pentosan method. He suggests that this loss may be due either to an actual destruction of the pentosans, or a change in the composition so that furfurol is no longer produced. It is possible, however, that this apparent loss may be due to the presence of other furfurol-yielding substances which he has called "furaloids." After the usual distillation employed in the official pentosan method, a subsequent distillation with acid resulted in a yield of furfurol which, when computed as pentosans, represents a remarkably

TABLE 5

Composition of peanut meal and soy bean

	PEANUT MEAL	SOY BEAN
	per cent	*per cent*
Moisture	6.50	10.00
Ether extract	10.50	14.89
Alcohol extract	16.07	
Carbohydrate of alcohol extract as glucose	3.49	4.51
Carbohydrate hydrolyzed by enzymes as glucose (other than alcohol extract)	3.19	3.64
Carbohydrate hydrolyzed by acid as glucose (Other than alcohol extract)	10.96	17.95
Total hydrolyzable carbohydrate	14.45	22.36
Utilizable carbohydrate	6.68	8.15
Non-Utilizable carbohydrate	7.77	14.21
Pentosans	4.99	4.94
Nitrogen × 6.25	51.56	38.29
Ash	3.77	5.54
Crude fiber (Musher & Co.)	4.50	4.64
Undetermined by difference	8.72	8.60

uniform amount if expressed in percentage of total pentosan content. This amount closely corresponds with the average losses in Fraps' experiments in boiling with acid. Hence the losses in the official method for determining pentosans may not be due to loss of pentosans but to the presence of "furaloids," which are not pentosans but may yield furfurol.

Summary of analysis of peanut meal

Table 5 gives a summary of the analysis made, together with a similar analysis of the soy bean. This analysis of peanut meal shows that, although it has a nitrogen free extract of 22.95 per cent a more complete analysis reveals the fact that only 6.68 per cent of the latter is utilizable

carbohydrate. The soy bean containing 8.15 per cent of corresponding carbohydrate has been used successfully as a diabetic food (11) for some time; from the standpoint of composition, peanut meal, containing even less utilizable carbohydrate should be even more successfully employed.

EXPERIMENTAL: PART 2. THE USE OF PEANUT MEAL IN BREAD MAKING

The analysis in part 1 of this thesis shows that peanut meal has a relatively small proportion of utilizable carbohydrate, and hence from the standpoint of composition it would make an acceptable food for diabetic patients. In table 6 the difference in composition in peanut meal, soy bean, and wheat flour is shown. These analyses show that peanut meal contains less than one-tenth as much utilizable carbohydrate as wheat flour, so if it can be sufficiently substituted for the latter in bread making it will make a valuable addition to a diabetic diet.

TABLE 6

The composition of peanut meal, soy bean and wheat flour

	PEANUT MEAL	SOY BEAN	WHEAT FLOUR
	per cent	*per cent*	*per cent*
Protein	51.56	38.29	9.69
Ether extract	10.50	14.89	0.33
Crude fiber	4.50	4.64	0.17
N free extract (by difference)	22.95	26.64	75.01
Available Carbohydrate	6.68	8.15	75.01
Moisture	6.50	10.00	13.75
Ash	3.77	5.54	1.05

Satisfactory bread substituting peanut meal for one-fourth of the wheat flour has been made by Johns and Finks (4). The experiments following were performed to determine whether more than one-fourth substitution is possible without rendering the product unpalatable, and also what is the most satisfactory procedure to secure a standard bread.

Bread and rolls using peanut meal varied by the addition of cheese, butter and nuts, were made which were palatable both fresh and toasted. The standard proportions for bread were used in making peanut meal bread, the meal being substituted for wheat flour by weight both one-third and one-half substitution giving a satisfactory product.

The most palatable bread was secured when the meal was subjected to a preliminary toasting to a light brown color, at 100° for 4 hours. It was then added to three-fourths of the liquid, heated to boiling, cooked

three minutes over an open flame and thirty minutes in a double boiler. This mush was cooled and mixed with the salt, fat, flour, and yeast mixed in the remainder of the liquid. The bread was allowed to rise twice, and was baked in the usual manner.

Table 7 shows the composition of some of the peanut meal bread, computed from the analyses in part 1.

The available carbohydrate of wheat bread was lowered from 20 to 14 grams per slice, or 30 per cent when peanut meal was substituted for one-third of the wheat flour and from 20 to 8.4 grams per slice, or nearly 50 per cent, when it was substituted for one-half of the flour. This makes it possible for a diabetic to have three of the 33 per cent peanut rolls in

TABLE 7

Composition of bread made with peanut meal

	MEASURE	WEIGHT	PROTEIN	FAT	AVAILABLE CARBOHYDRATE
		grams	*grams*	*grams*	*grams*
Bread (1 slice):					
50 per cent peanut meal	3½ x 2½ x ½ inch	35	8.08	2.30	8.42
33⅓ per cent peanut meal	3½ x 2¾ x ½ inch	35	6.16	1.84	13.62
100 per cent wheat flour	3½ x 2¾ x ½ inch	39	3.20	0.60	20.00
Rolls (1 roll):					
50 per cent peanut meal	2½ inches d ameter	18	3.74	2.52	5.10
33⅓ per cent peanut meal..	2½ inches diameter	18	2.88	2.30	7.39
100 per cent wheat flour...	2½ inches diameter	18	1.50	0.40	10.0

place of two all wheat rolls, or two of the 50 per cent peanut rolls for one of the all wheat.

The following experiments and recipes give the details of the work.

Determination of the extent to which peanut meal may be substituted for wheat flour in bread making

Procedure. In determining the extent to which peanut meal could be substituted for wheat flour in bread making, the following constituents were kept constant in all experiments:

Butter	14 grams
Salt	1 ts.
Water	1 cup
Compressed yeast	1 cake

The proportions of peanut meal to wheat flour were varied as follows:

	PEANUT MEAL	WHEAT FLOUR
	grams	*grams*
1	0	339
2	87	252
3	113	226
4	170	170
5	226	113

In this experiment the peanut meal, flour and salt were sifted together, the yeast mixed in the liquid, and the melted butter added; this dough was kneaded, allowed to rise, kneaded again, molded into loaves, and baked in the usual manner.

Results. 1. Palatable bread was obtained in all cases except *5* where peanut meal was substituted for two-thirds of the wheat flour.

2. No particular difference was noted between *2* and *3*, hence the experiments hereafter are confined to work with the proportions of *3* and *4*. Both yield a bread of good flavor which is improved by toasting. The bread is slightly sticky and moist even on the second day after baking. There were no indications of staling on the third day after baking.

Determination of the best procedure for the incorporation of peanut meal in bread

Procedure. The proportions used in *2* and *3*, described in the previous experiment were used. The following methods of mixing were employed:

1. The dry ingredients were mixed and sifted and to this was added the yeast dissolved in liquid, and the melted butter.

2. The peanut meal and three-fourths of the liquid were heated to boiling and boiled 3 minutes over an open flame, then cooked for 30 minutes in a double boiler, cooled to lukewarm, the other ingredients added and the general procedure as in the first experiment followed.

Results. A loaf of finer grain, more even texture and rising, and decidedly better flavor was the result when the meal was cooked before making the bread.

The use of a combination of wheat, soy bean and peanut flours in bread making

Procedure. In addition to the constant constituents as stated in the first experiment of this series, the following amounts of peanut, soy bean and wheat flour were added to this bread:

Wheat flour	170
Soy bean meal	87
Peanut meal	87

The soy bean meal and peanut meal were cooked with three-fourths of the liquid as described above and the same procedure in mixing was followed.

Results. A combination of peanut, wheat and soy bean flours produces a bread of fair quality only. The texture and flavor are not equal to the bread of peanut meal and wheat flour alone.

The use of toasted peanut meal in bread making

Procedure. Peanut meal was toasted to a light brown color at 100°C. for 4 hours and substituted for untoasted peanut meal—using the following proportions:

TOASTED PEANUT MEAL	WHEAT FLOUR
grams	*grams*
113	226
170	170

Bread was made from a mush of the toasted meal and the liquid, cooked as described above.

Results. A superior product was obtained when the peanut meal was toasted before using in bread making.

Possible variations of peanut meal bread

1. The addition of 39 grams extra butter to the standard proportion and molding into Parker House Rolls, small buns and biscuits improved the palatability.

2. The addition of chopped nuts or grated cheese to the dough and cutting into strips or circles furnished a pleasing variation.

GENERAL CONCLUSIONS

Palatable bread can be made when peanut meal is substituted for as much as one-half of the wheat flour in standard bread. The best prod-

uct is secured when the meal is toasted to a light brown and made into a cooked mush before mixing the bread. The addition of nuts or cheese and the making of fancy shaped rolls improves the palatability.

SUMMARY

A proximate analysis of "Choice Peanut Meal," agreeing closely with analyses by Fraps, has been made, showing among other results a nitrogen-free extract of 22.96 per cent. An analysis of the latter showed that peanut meal has a comparatively low percentage of starch and sugars (6.68 per cent), and a comparatively high percentage of hemicelluloses (7.77 per cent), thus indicating that it would be of value in a diabetic diet.

It has been found possible to make palatable bread when peanut meal is substituted for as much as 50 per cent of the wheat flour, if the meal is first toasted and made into a mush before mixing the bread. Computing from the analyses made of this peanut meal such a substitution in bread lowers the available carbohydrate 45 per cent (from 20 to 8.4 grams per slice). Hence peanut meal furnishes a valuable addition to a diabetic diet.

In conclusion I wish to express my appreciation to Miss Evelyn Halliday and especially to Dr. Katharine Blunt for inspiration and guidance in this work.

REFERENCES

(1) Fraps, G. A.: The composition of peanuts and peanut by-products. Bull. Texas Agric. Expmt. Station 222, 1917.

(2) Johns, C. O., and Jones, J. A.: The proteins of the peanut. Nat. Acad., Sci., 3: 317, 1917.

(3) Daniels, A. L., and Loughlin, Rosemary: Feeding experiments with peanuts. J. Biol. Chem., 33: 296, 1918.

(4) Johns, C. O., and Finks, A. J.: Studies in nutrition. IV. The nutritive value of peanut flour as a supplement to wheat flour. J. Biol. Chem., 42: 569, 1920.

(5) Holmes, A. D.: The digestibility of protein supplied by soy bean and peanut cake. Bull. U. S. Dept. Agric., 717, 1918.

(6) Street, J. P., and Bailey, E. M.: The carbohydrates and enzymes of the soy bean. J. Ind. and Eng. Chem., 7: 853, 1918.

(7) Official and Provisional Methods of Analysis: Bul. Bur. of Chem., 107, 1907.

(8) Mathews, A. P.: Physiological Chemistry. New York, William Wood and Co., 1916.

(9) Hawk, P. B.: Physiological Chemistry. Philadelphia, P. Blakeston's Sons, 1918.

(10) Fraps, G. A.: Distribution and digestibility of the pentosans of deeds. Bull. Texas Agric. Expmt. Station 175, 1915.

(11) Roberts, I. J., and Miller, E. W.: A cheap home-made soy bean meal for diabetics. J. Home Econ., 10: 64, 1918.

(12) Sherman, H. C.: Organic Analysis. New York, The Macmillan Co., 1912, p. 394.

A NUTRITION WORKER IN THE HOSPITAL

HELEN HUBBELL
Yale University School of Nursing

There is probably no truer friend of hospital Nutrition and Dietetics than Dean Annie W. Goodrich, who is heading this new adventure in nursing at Yale University. It was through her deep appreciation of these subjects as part of a nursing curriculum that a full-time worker was appointed to work with student nurses and patients on the wards.

Before telling you more specifically of this undertaking, I wish to present the setting for the problem:

First, as to the Nursing Staff. The Connecticut Training School for Nurses, which has furnished the staff for the New Haven Hospital in the past, is this year graduating its last class of nurses and at the same time the Yale School graduates its first class.

There are thirty-six Yale Students at present. Working side by side with these two schools have been affiliating students from twenty-two nursing schools, who come for courses in Pediatrics, Medicine, Obstetrics, Surgery, and Communicable Disease. There is also a large graduate staff composed of supervisors, head nurses, and floor duty nurses.

Second, as to the Staff of the Dietary Department, with whom the closest of contacts must be made. There is a chief dietitian who is directly responsible to the hospital but the therapeutic dietitian is a member of the staffs of both the School of Nursing and the Hospital. The assistance of a third dietitian is needed to carry out their work. There is also a graduate nurse, specially trained in metabolism problems, who is a member of the Department of Internal Medicine and on the Nursing Staff. All cases of diabetes, nephritis and epilepsy come under her direct supervision. She and the therapeutic dietitian work closely together, dividing the teaching of patients between them.

Third, as to the status of the Yale Students themselves. The original requirements for entrance was the satisfactory completion of four years of high school work and the entrance examination required by Yale College. Owing to the fact that the classes of 1927 and 1928 were largely composed of students who were either college graduates or had taken further academic work since high school, the entrance requirements

have been changed to two years of acceptable college work. These students pay for their tuition. Due to the heavy theoretical schedule they carry, the time spent on the wards is less than in the average hospital. To those students who enter with two years of college work to their credit and successfully complete the course offered, Yale grants a Bachelor of Nursing degree.

As to my own position; I am a member of the faculty of the School of Nursing, but have no direct connection with the hospital. It is essentially a research position in which I am endeavoring to work out methods by which the student nurse can be brought into closer relationship with her patients from the nutritional standpoint. One small boy said to a newcomer, as I passed by, "She is the lady that makes you eat your spinach." He outlined my position clearly, for I am not only deeply concerned with what and how much a patient eats while in the hospital, but am concerned also that he shall receive some instruction in diet before leaving.

One of the provisions made in establishing the Yale School of Nursing was that emphasis be laid throughout on public health and preventive nursing. Miss Amelia Grant, who up to February first, was an Assistant Professor in the School and directed the nursing service of the Out-Patient Department, begins a paper on "The Principles of Public Health Nursing in the Undergraduate Course," as follows:

> It is emphasized more and more that hospitals are health centers. This implies coördination of health work and coöperation with other social agencies in furthering the welfare of the community as a whole. Such a plan tends to broaden the scope of the medical and nursing services of the hospital. Nurses who understand and are interested in preventive work and who are able to teach positive health are needed in hospital wards and out-patient clinics. After all, the patient's needs are practically the same whether he is being treated in the hospital or in his home. No one has a greater opportunity to carry the message "health and right living" than the private duty nurse. The nurse who is caring for a sick member of a family has a position which gives her an opportunity for health work not open to many other workers.

Since the nurse has such an unique opportunity for teaching health it stands to reason that nutrition in its relation to the general well being of the individual patient must be emphasized. Therefore, my chief concern is with patients who present to the doctors no specific dietary problem, but, nevertheless, need help in the planning and in the use of a well balanced diet. These patients are usually on soft or regular

diets, with possibly the addition of high caloric or anti-constipation extras. Aside from the patients on the medical and surgical wards, there is much to be done along the lines of health teaching on the pediatric and obstetrical wards.

Just what is the Yale Student's training in Nutrition? It is so closely related to the public health development that mention will be made of those courses which bear on Public Health as well as on Nutrition and Dietetics.

During the pre-clinic term of four months, before the student is on the wards full time, she has a forty-five hour course in Chemistry, including both lectures and laboratory work, and the same amount of time in Nutrition and Cookery. The latter course I teach, as it is there that an appreciation of the value of normal nutrition is developed. In following the students on the wards I can hold them responsible for a very definite body of knowledge along this line. Only the fundamental cookery procedures are taught in order to have more time for practice, as many of our students have had little experience in the preparation of foods.

At this time a course is given called "The Social and Economic Aspects of Disease." It includes excursions to the various Welfare Agencies of the city as the Visiting Nurse Association, Bureau of Social Welfare, and the Childrens' Community Center. In this way the students become familiar with those organizations which may have known the patient before he is sent into the hospital and through whom plans may be made for an adequate following of the case on discharge.

After the preclinic term, these students are assigned to the medical and surgical wards. Early in this period a group conference is held to explain the method of serving diets and to emphasize the student nurse's responsibility for the nutritional care of her patients. Cards of different colors to indicate the types of diets, are used on the trays and they are of great help. Each card has the heading "Individual Preferences" under which the student writes down such suggestions as: no sugar on cereal, no milk in tea, never eats fish. Each patient is an individual and his preferences should be considered in so far as they are compatible with the diet to be served and the nurse's time. In order that the student may learn to analyze her ward experiences she keeps a daily record of her practical work, under the following headings: Patients cared for; Medical diagnosis; Observations of symptoms and signs related to medical diagnosis; Family or social problems; Nursing

care, treatments, diets, teaching experience, etc.; Observations of symptoms related to nursing care, treatments, diets, etc.; Job analysis, student's criticism of work. Thus it is possible to know what teaching the students are actually doing and whether they are observing the effects of the dietary care and advice. Conferences are frequently held with individual students to discuss special problems, many of which may have been referred by the student herself, by the head nurse or by the supervisor.

A valuable method of studying the patient as an entity is through the writing of case studies: A sample case study follows, which shows the headings that are used, but gives in detail only that subject matter which is related to nutrition and health problems:

I. History.

a. Social:

1. Patient was referred by outside Doctor who was called to meet the emergency, splinted the leg, and advised hospital care.
2. Age—14 years. Healing of injury will be accelerated because of her youth. Nativity—born in U. S. A. Citizenship—Parentage on both sides is American.
3. Patient's occupation, that of student, is related to her health problem, only in that her hospital and subsequent home care necessary will prevent her from attending classes for some weeks, and will make it necessary for her to make up considerable work on her return to school.
4. Family responsibilities: Patient has three own brothers and one own sister. The sister and two brothers are married, and live nearby. The youngest, unmarried brother lives at home. He is older than X—, is sixteen, and is working. Patient's mother is dead and her father has married again, and has five daughters and one son by this second marriage. The youngest is eight months, the oldest twelve years.
5. The family lives in a single house in the country with considerable land and garden.
6. There has been little sickness in the family. Patient says most of her brothers and sisters have had measles, mumps, and chicken pox, but can give no report of serious illness nor after effects.
7. Neither patient nor family is known to the Out Patient Department nor to social agencies.

b. Health habits:

1. Patient goes every day to the high school. She is in the second year, is taking the business course including English, shorthand, typewriting, bookeeping and cooking. She is tremendously interested in her school work and the fact that she must be absent for some time is a source of worry to her. She intends to finish High School and then secure a position as stenographer. She loves to read but does not have time for much outside reading as a great deal is required for her school work, and when she is at home, her help is required about the house. Her regular duties are every morning to care for her room and for the two half sisters who share it with her, every night to wash the dishes and every Saturday to help with the washing. Besides this she helps with the cooking when required and since last year, when she took sewing in school, has helped to sew for herself and her younger sisters. She enjoys out-of-door sports.
2. Cleanliness: Patient takes two or three baths a week, sometimes only one, during the winter especially. She takes fairly good care of her teeth, hair and nails. She helps to keep the younger members of her family clean, but "doesn't have time to give her little sister, 4 years old, a bath very often."
3. Dietary: Patient says her appetite is fairly good at home, though she seldom takes more than one helping of anything, and doesn't eat much breakfast. She drinks a good deal of milk, usually in the form of cocoa, which her mother makes for every meal. She eats breakfast and supper at home but takes her lunch with her to school, but often has cocoa when she returns in the middle of the afternoon. She drinks coffee and tea occasionally, has many vegetables and likes all kinds quite well. It is evident that her mother plans the meals with care. Patient is frequently constipated, and has never thought about the desirability of drinking a quantity of fluids. Most of the water she has drunk has been at meals.
4. Patient usually goes to bed between nine and ten. She sleeps in the same bed with two half sisters aged four and seven. The windows are open at night.
5. Patient exercises every day. Although much time has to be spent in riding on the trolley to and from school, her mother likes her to play out-of-doors a little every day. Often she minds the younger children. She skates and coasts during winter often.

c. Medical history:
1. Past . . . .
2. Present: On March 5th patient was met at the car by her father in his automobile, and as he was driving her home, the car skidded in a track, struck a tree, and the patient's leg was caught by the door. There was immediate pain in her leg and loss of function. There was laceration over the medial aspect of the thigh with some bleeding. She was brought into the hospital in a condition nearing shock. (The outside doctor had previously splinted the leg.)

II. Symptoms:
1. Subjective . . . .
2. Objective . . . .
Results of examinations:
a. Urine: Clear amber; acid reaction; a sediment; specific gravity 1.022; no albumen; no sugar.
b. Blood count: High count of white blood cells—24,400 (after four days blood count shows this number to be reduced to 18,560). Red blood cell count is 3,200,000, low by 2,000,000 from normal.
c. Blood pressure: On admission very low—90/55. After an hour it rose to 110/65.
d. Wassermann Test—negative.
e. Examination of sputum for Tuberculosis—negative; many white blood cells present.

III. Diagnosis:
a. Social:
1. Need of occupational therapy while at the hospital. Patient is young and active and to keep her mind off herself and the uncomfortable frame, her interest and attention must be diverted.
2. Need of instruction in home hygiene.
a. cleanliness
b. care of children
c. dietary standards
3. Loss of School work.
b. Medical:
1. "Complete transverse fracture midshaft of right fenner. There is overriding of approximately 5 cm. Outward displacement of lower fragment" (X-ray report).
2. Acute bronchitis (post-influenzal).

IV. Treatment and nursing care:
a. Medical—doctor's orders regarding:
1. Reduction of fracture

2. Immobilization of fracture
3. Forced fluids were ordered in order that by thorough elimination the patient might get rid of the bronchial condition. Her bowels were kept open, and enemas ordered when constipation occurred. She was allowed the regular diet.

b. Nursing in relation to:

1. Social needs:
   (a) Patient was supplied with books and magazines, papers and pencil. Interest stimulated along certain subjects dealt with in this reading material.
   (b) "Instruction" in home hygiene was given:
      (1) Importance of cleanliness and fresh air was stressed.
      (2) Dietary standards were talked of every day, and dietary slips given patient. All this was done on the basis of the study patient has had this year in cooking and student nurse tried to develop the curiosity and interest of the patient in the subject. A book on foods was lent to patient, which she read with considerable interest.
      (3) Various hygienic rules were stressed on the basis of patient's care of her smaller half brothers and sisters and it was also mentioned that the patient would try to apply these rules to herself. She had never before realized the importance of drinking water freely.
   (c) Patient was supplied with Louisa Alcott's "Eight Cousins" which was a book required for school work.
2. Medical needs:

. . . . . .

      (4) The patient was encouraged to drink fluids, and kept to over 3300 cc. intake each day. Orangeades, chocolate milks, etc., were made for her daily, and water was kept continually at hand.

. . . . . .

3. Food habits in hospital:
   (a) Number of calories eaten for three days: First day, 1075 calories; second day, 1490 calories; third day, 1750 calories. Instead of averaging the three days, I shall take 1750 calories as a truer average, as the

patient did not eat an average amount on the preceding days owing to her lack of appetite from the bronchitis. As she is better, now, but will have to remain quiet, 1750 calories is a truer basis for calculations.

(b) Patient's food has been balanced well with the exception of roughage. She has not eaten much cereal nor had many green vegetables with the exception of the spinach and lettuce and it may be that her constipation in the hospital has to do with this lack. Her protein intake has been low.

(c) Patient's average fluid intake has been 3400 to 3500 cc. Considering her bronchitis she should be forced to 4000, but she does not like to drink water and needs encouragement.

(d) She has eaten only fruit between meals.

(e) Determination of food requirement: The patient's weight has not been recorded, nor does she know it accurately. A girl of her size, estimating her weight as 110 and age 14 with active life should eat 2200 to 2800 calories a day (Sherman)—with complete rest she should require 1500 to 1800 calories a day, which she is receiving. The physical examinations gave the doctor the impression that she was up to par in weight.

V. Prognosis and progress:

1. There was evident improvement in patient's bronchial condition. Patient expectorated less mucus and the fever, which was due to the bronchitis and to the wound healing, became gradually less.
2. The patient's mental attitude changed from one of pessimistic "Dopiness" to a cheerful interest in the ward and activities about her, and to her reading and other occupations.
3. The wound showed evidence of clean healing and formation of granulation tissue.
4. There was less tenderness in the fractured area and more freedom of movement of the foot.

The prognosis is good.

VI. References consulted:

1. Patient.
2. Medical report.
3. House surgeon.
4. Whitman's Orthopedic Surgery, Ch. 23.
5. Kolp and Kellar—Fractures.

6. Proudfit—Dietetics.
7. Rose—Feeding the Family.
8. Sherman—Chemistry of Food and Nutrition.
9. Carter, Howe and Mason—Nutrition and Clinical Dietetics.

An actual record of the patient's intake is not always kept, but at least one case study must be worked out in this way. Sometimes there will be the problem of correcting constipation or possibly there is simply a need for regulation of diet. When a man says that he eats a bottle of horse radish in one day and a bottle of catsup in two; or a mother with little children never eats vegetables; or another patient drinks but one or two glasses of water a day; it is time health instruction was given. Many patients are much pleased to have a diet list to take home. A very simple one has been prepared giving the minimum food requirements. The nurse can discuss this list with the patient, thus making it a summary of the nutrition teaching that has gone before. It must be adapted to the individual patient, depending on his previous food habits, financial situation and present physical condition. Frequently there are patients who enjoy reading Hygeia or Mrs. Rose's "Feeding the Family." It would be worth-while to build up a library of instructive health books for the ward patients.

After two months of medicine or surgery the students begin their course in Diet in Disease—lecture, 15 hours; laboratory, 30 hours. They take up in detail the methods of dietary treatment of disease and figure out and prepare sample diets. During this period they have their Diet Kitchen practice of two weeks. Too short a time, everyone admits, but with a shortened period of training and a lengthened curriculum, it is all that can be allowed. Again the experience records are used. Before a student can successfully plan a diet for a patient, she must visit him on the ward to discover his preferences in food. Then she follows the diet therapy and notes on the record those factors which influence its use. The following headings are used: (1) Patients cared for, (2) Medical diagnosis, (3) Observations of symptoms related to diet, (4) Family or social problems affecting diet, (5) Diets, teaching experience, etc., (6) Observations of symptoms related to efficacy of diet, (7) Job analysis, student's criticism of work.

So far nothing has been said about the doctors. It goes without saying that they order the type of diet a patient should have while in the hospital. On discharge, the patient who has been on a special diet receives specific dietary instruction, outlined by the doctor and inter-

preted by the dietitian or the nurse who supervises the metabolism cases. But as there is no provision made for the patient whose diet problem is not outstanding, the physicians and surgeons seem definitely interested in the plans we are developing for normal diet instruction.

When it comes to the Pediatric wards the possibilities for health teaching are unlimited. The orthopedic cases often remain in the hospital for months so that the nurse has it within her power to teach the best of food habits including table manners. There is usually a group of ambulatory children who can eat at the small table in the center of the ward. A student is there to urge the desirability of leaving a "clean plate" and of making friends with "Johnny Carrot" and "Susie Spinach." The desire is to create sufficient public opinion, so that the taking of three good meals a day is the rule and not the exception. The giving of stars to the successful children is always a stimulus to further effort.

The Obstetrical Ward also presents its nutritional problems as does the Formula Room, but those will not be discussed in this paper.

Through all the hospital training of these students the public health attitude of preventive nursing is stressed through an intimate study of the patient as a "person." After two courses, Elements of Public Health and Methods of Public Health Nursing they able to undertake the two months with the Visiting Nurse Association with a vastly different point of view than that of students who have considered their patients as simply members of a great institution with no thought of where they came from or to what they are returning.

The question naturally arises "With what department shall the nutrition worker be affiliated?" In working out such a problem as is being attempted at Yale it seemed wisest for her to be relieved of all responsibility except as definitely relating to her work. If in the future an outline for teaching can be evolved, it would seem only logical that the nutrition worker should be a part of the Dietary Department, sharing in certain of its responsibilities and correlating her work even more closely with that of the other dietitians.

Health education is gradually finding its place in the hospitals. Just as today cookery is not taught merely as end in itself, but as a means to an end and that—optimum nutrition; so expert bedside nursing care, although essential, is simply one aspect of the student nurse's education. Promotion of good health and prevention of disease with its consequent suffering and loss of efficiency is the ultimate aim. Thus the study of the nutritional problems of a patient is one of the important factors in obtaining this goal.

FOOD FADS

MARY PASCOE HUDDLESON

New York City

A "fad" has been defined as a "pet notion or rule of action, craze, or piece of fancied enlightenment." A "food fad," then, may connote a fancied enlightenment (built on an unscientific hypothesis) regarding diet. Strange dietary beliefs have existed from earliest times, though of late years they seem to have been more prevalent. It may be incorrect to say that food fads constitute a modern expression of today's radical tendencies, yet many food cultists appear to lean toward extreme views on matters other than diet. Read (1), in "Fads and Feeding," feels that the many new developments in the field of nutrition have been indirectly responsible for numerous food fads. The well-meaning individual with a smattering of information regarding these researches, steps forward and shows mankind that for centuries people have been courting disaster by swallowing the wrong food. The more extreme a faddist proclaims himself to be, the more converts rally to his standard.

Vegetarianism, one of the more popular food fads, is not new; it became a pronounced fad with Anglo-Saxons about the beginning of the last century. There are doubtless very few *real* vegetarians in the strict sense of the word. In general the term indicates merely abstinence from flesh food; eggs, milk, cheese and butter are invariably adjuncts to a so-called vegetarian régime. Vegetarians are apt to be ardent propagandists—witness the poet Shelley (2), in the "Golden Age," speaking of that epoch when:

> Never again may blood of bird or beast
> Stain with its venomous streams a human feast.

Shelley's early death, of course, had nothing to do with his dietetic opinions.

We have various types of vegetarians, for example, the raw food faddist (3) who fills his pocket with dried peas and goes comfortably through the day, the curious individual who lives only on nuts (doubtless a nutarian), and the "fruitarian," a more delicate term for essentially the same person. England, the home of good roast beef and Yorkshire pudding,

has fostered, strangely enough, many enthusiastic schools of vegetarianism. Before the so-called vegetarian restaurant began to flourish in this country, Eustace Miles founded many of these eating places in London. The writer remembers vividly when visiting in London years ago the sadly serious intensity with which patrons ate in these restaurants.

Mr. Miles (4) disapproves heartily of all meat, wine, doctors and women who do not know the meaning of the word "Proteid." He advocates carrying a "protene" biscuit or two in one's pocket to obviate the ever present danger of running short of the all important "Proteids" when invited out to dine, since "The ladies have the most excellent intentions but the most stupendous ignorance" regarding the right planning of meals to provide adequate "Proteids." As a weighty argument in favor of his diet, Mr. Miles mentions the case of St. Mango, who touched neither meat nor wine, and lived to the age of 185 years. As additional inducements to us he offers the following examples of vegetarians, "the male inhabitants of Honolulu who can raise anchors weighing 600 pounds," and Thomas Parr who lived on coarse bread, milk, cheese, etc., and at the age of 120 married again. Regarding fasting, he is of one mind with Socrates who said, "The less you shall need, the nearer you shall approach the gods, who need nothing." In his final chapter Mr. Miles reverts delightfully and poetically, but scarcely in the style of Shelley, to his revered "Proteids:"

> Take enough of Proteid-Food
> Drink at meals is hardly good.

Another determined vegetarian, Devereaux (5), quotes on the same page our own Bernarr McFadden, as well as Eustace Miles, Albert McCann and Professor McCollum, approving more or less of all of them. This author firmly believes that "on a diet of nuts, fruits, canes, leaves, and flowers" we would all be as agile and strong as the ape, the gorilla, and the chimpanzee, able to bite rifle barrels in two, wrest a sapling from the hands of six British sailors, swing 40 feet from one limb of a tree to another or beat a crocodile to death (the latter, it is inferred, would be powerless all the while since he is not a vegetarian). As opposed to the usual inadequate means of diagnosis employed by physicians, he quotes Louis Kuhne (6), who could diagnose the disease and condition of the body from the shape and position of the fat deposits. Mr. Kuhne's treatise might be useful in frightening the obese individual into thinness. If he saw a person with the neck "bulging at the back," he believed that

the "morbid matter" (i.e., fat) was encroaching toward the brain and mental deterioration was to be expected. If this "morbid matter gathered up the front," a consumptive condition was probable.

Mr. Devereaux deduces further that since flour will make paste and meat glue, consumers of these foods will eventually fill their bodies with a pasty substance, or "toxin varnish." Individuals with shiny skins are more or less saturated with this "toxin varnish." Catarrh, consumption, and so on, are some of Nature's methods of ridding the body of this interesting substance. Arthritis is the hardening of this varnish in the joints. Cereals cause hardening of the arteries, and as a dreadful warning against *all* cereals he says: "We perceive the place that oatmeal has had in the formation of the well-known characteristics of the Scotch race. . . . . Persons of a dull cadaverous appearance, with harsh, rough skins, who are thin and bony, and continually troubled with some complaint or another, I have always found to be attached to cereals." Butter, cream, and cheese he considers worse than milk, since as "whole milk is not a perfect food, it is easy to see that any part of it is worse still." As for meat-eating, "chemistry, anatomy, instinct and experience are all against the disgusting habit." After having delivered himself of all this wisdom, the writer feels so elated that he adds a special chapter on trees, one of their virtues being "the great benefit derived by pregnant women who have made a daily habit of tree climbing."

A leading fruitarian, Oldfield (7), describes a hospital where neither patients, nurses, nor medical staff partook of any form of flesh food. The fruitarian diet "consists of fruits of trees . . . . the fruits of bushes . . . . the fruits of grasses . . . . the fruits of nut trees . . . . together with some earth fruits (like potatoes and a modicum of vegetables and salads)." To those may be added butter, milk, honey and cheese, although, he continues, their production is not so free from risk of contamination and animal infection as in the case of the products of the vegetable kingdom and the "world of fruits." This writer says that if you give a man fruits and grains, he will work restfully and steadily and patiently; but if you give him meat, he will work restlessly and spasmodically. Meat, he adds, "is not decent food—even for a hyena, much less for a dainty woman or an artistic man."

The same writer approves of fasting (8) as "a means of linking the world beyond the gates to the world within the walls of the senses." Materialistically speaking, he advocates fasting "as a physiologic, an eliminative or an alternative." He appears to be responsible as well for the

"dry diet cure" (9)—the "immediate and complete cutting off of all fluids, drinks, and fluids in foods," in treating "dropsy," heart and kidney complications. He also feels that it is the "water-logged leg" which breaks down into varicose ulcers, and the "water-logged intestines" which break down into peptic ulcers.

Dr. Oldfield has also given the helpful "raisin cure" (10) to an eager world, for asthma and bronchitis, "abdominal stoppage," and pulmonary catarrh. The basis for the raisin diet is this, "If we reduce the amount of starch in the diet we reduce the amount of carbon which has to be got rid of by the lungs. If we reduce our flesh foods . . . . we reduce the amount of ammonia which we have to get rid of by our lungs." Ergo, raisins are neither starchy nor productive of ammonia, thus relieving the burdened lungs. The raisins must be soaked for about 12 hours in cold or luke-warm water, preferably rain water. He advocates eating ½ to 1½ pounds per day. In addition, the patient "should have a quiet room, one preferably looking towards the morning sun." The "cure" requires one months' stay at Dr. Oldfields' hospital. This starts with castor oil at 5 p.m., followed by 2 ounces of raisins at 7 p.m. To insure that no one be disappointed he says that "definite data of improvement may not be very markedly manifest at the end of the "cure"—the lay mind might even be unable to be assured that any real improvement had taken place"!

Amusing mental pabulum along dietary lines is abundant in this country, as well as abroad. An alarming number of books with sensational titles have been written by persons with little or no real knowledge of nutrition. Some of these books have enjoyed great popularity and are responsible for many of the current erroneous dietary ideas. The unsound advice offered may not be dangerous if followed for a time by the physically normal individual; however, when adopted by the sufferer from a chronic disease the harmful results may be far-reaching.

Many authors of these so-called books on diet seem to have snatched extreme ideas from more than one food cult. One such (11) contains many choice bits, for example, a single set of menus designed for the "treatment" of all these conditions: "superacidity, flatulency, irregular heart action, dizziness, vertigo, fevered stomach and lips, cankers on the tongue, nervousness, mental depression, and insomnia." The obese person is comforted by menus allowing indefinite amounts of very ripe bananas with cream, nuts and nut butter, baked chestnuts, raisins, and figs. The victim of malnutrition gets a Spanish onion (uncooked), a

bit of dried fish, and a hard cracker at luncheon, and has to exercise vigorously when he arises. The heavyweight on the other hand instead of exercise on arising may eat (before breakfast) melons, berries, fresh or soaked dried peaches. The business man is advised not to worry, to take vigorous exercise calmly, and to inflate his lungs to their fullest capacity several hundred times a day—"this is of very great importance." If one wishes to increase mental efficiency there is a special diet for that very purpose. The book also contains dietary instructions which were made out for a middle aged sedentary man "who had not only given up his work but *also* his friends." On the diet he was a "new man in 60 days."

Another writer (12) makes a plea for flavor in foods and enjoyment in eating. One is duly grateful for this, yet irritated that so much good paper should be used in expounding the dogmatic personal views of a layman. This author regards calories and vitamines "as fads which actually have retarded progress by delaying general recognition of the all-importance of food minerals, the true elixir of life, health and longevity." This is a good example of half-baked pseudo-scientific reasoning. He also advocates eating one's asparagus, green peas and corn raw. He insists that boiled potato must not be eaten else acidosis will result. He follows this dictum with the helpful suggestion that orange or lemon juice is an "antidote" to acid stomach, thus apparently falling into the common error of confusing gastric hyperacidity with acidosis. Next we meet this naïve paragraph: "Don't you think food chemistry is a most fascinating and helpful science?"

Froude (13) as well is greatly concerned over the question of acidosis. On page 57 he says, "acidosis is scurvy in a mild form." He is still worrying about it on page 59 where he gives this good advice, "Acidosis should not be allowed to develop to the pellagra stage." Heaven forbid! On page 96 he enlightens us further on his favorite subject, when he states that "starch poisoning and acidosis are really synonomous terms, for the latter is invariably caused by over-consumption of starch and sugar." He is surprised that we have any farmers left, as they are suffering from acidosis or starch-poisoning. Mr. Froude does not approve of nitrogen, either: "nitrogen is the most deadly enemy of oxygen (which is present in fruits and vegetables). Oxygen stands for life, whereas nitrogen stands for death."

Returning to starch, he believes that jams, jellies and preserves should never be eaten with bread, nor should strawberries be made into short-

cake. Neither cheese nor eggs should be eaten with bread or crackers. Eggs should be eaten with either fruit or vegetables. Eggs contain a surplus of phosphorous which overstimulates the nervous system. Elements in cereals act in the same manner.

Also he is a "no breakfaster" (14); in fact the greater the distress one has from going without breakfast the stronger the reason for doing so. The distress is evidence that the food eaten in the morning has been stimulating or paralyzing the nerves. He blithely states on page 198 that "most food cranks are dyspeptics." He gives helpful hints to his followers for use when dining among the unenlightened, for example, "a good conversationalist has an advantage, for he can keep up a banter of talk, a sort of barrage of fire, to divert the attention of the hostess from the food he is *not* eating." He says that a banquet is often the last straw, as many lives are sacrificed at the banquet table. He has evidently been reading Mr. Kuhne's book since he disapproves heartily of both double chins and rolls of fat at the back of the neck, signs that "often indicate heart and kidney disease." He comforts thin people by telling them that they are "built for speed rather than comfort."

All in all, Mr. Froude seems to view the world sadly. He says: "What difference does it make whether we die from diabetes caused by starch poisoning, or from neuritis or delirium tremens, caused by alcohol poisoning, or from rheumatic heart disease or apoplexy, caused by meat poisoning?" Readers of this book are apt to develop a marked sitophobia.

Another writer (15) is so enthusiastic for mineral salts that he contends that syphilis may eventually be combated "by right use of food nutrition and the employment of the mineral salts in microscopical form."

It is a pleasure to find a meat champion. Stuart (16), who introduced the "Salisbury diet" in England, apparently had marvelous powers of diagnosing and treating patients "some hundred miles away." "Microscopical examinations of specimens" enabled her invariably to diagnose the disease and to determine what the patient had had to eat for two or three days previously. Here is a résumé of the Salisbury diet: Take four pints of hot water a day—neither more nor less—and restrict your diet for a time to animal food, preferably beef, finely minced. One and a half hours *before* each of your three meals, *always on an empty stomach*, take one pint of hot water, and some three hours *after* your last meal take your fourth and last pint. The minced beef should not be underdone, "as it is then less soluble in the stomach than when done to a

turn." Use black and red pepper freely, also salt and mustard. Chutney sauce is the only sauce allowed. In case of hunger in the night, "have a cup of good beef-tea, or jelly or beef mince beside you; when wakeful take a few mouthfuls, and ere long sleep and oblivion will kindly enfold you"!

The "Salisbury diet" faddists, in common with most other food cultists, are not in sympathy with ethical medicine. A "long course of expensive study" is unnecessary in order to acquire the adequate knowledge for treating the sick. Mrs. Stuart claims that the Salisbury diet will cure all diseases including asthma ("which is a disease the result of gravel in the air passages") and cancer. She summarizes the virtues of the meat "cure" as follows: "All dangerous and mis-called incurable and fatal diseases—such as consumption, locomotor ataxia, Bright's disease, diabetes, paralysis, tumours, cancers, pernicious anemia, weak heart, rheumatism, gout, etc., etc., are the direct outcome of feeding too exclusively upon the various vegetable, cereal, and fruit foods." All these diseases, the author adds, are easily preventable and curable by the Salisbury diet.

Fletcherism is not such a modern idea as one learns when he reads Moffett's (17) compendium on food published in 1655. In the quaint fashion of the time he says: "Mince or chew your meat finely, eat leisurely, swallow advisedly. . . . . But do not sit so long as Hugutio Fagiolanus who, as Petrarch reporteth, lost both the City of Pisa and Lukes at one Dinner, because he would not arise . . . . to repel the Enemy, till his Dinner was fully ended, which usually was protracted two or three hours."

Hopkins (18) asserts that mis-interpreted science has encouraged food faddists more than any teachings based on experience and common sense. Throughout history sections of society and even whole races have allowed theorists—a few of them wise, most of them foolish—to interfere with habits and instincts regarding food. Such interference has usually been based upon faith or superstitions, certainly not upon superior knowledge of the nutrition of the body.

REFERENCES

(1) READ, G. STANFORD: Fads and Feeding. Methuen & Co., London, 1908.
(2) SHELLEY, PERCY BYSSHE: A Vindication of Natural Diet. C. W. Daniel Co., London (1922?).
(3) MCDERMOTT, STELLA: Metaphysics of Raw Foods. Burton Publishing Co., Kansas City, Mo., 1919.

(4) MILES, EUSTACE H.: Muscle, Brain and Diet. Swann, Sonnenschein & Co., London, 1903.
(5) DEVEREAUX, JAMES R.: Eating to Banish Disease and Save Civilization. C. W. Daniel Co., London, 1925.
(6) KUHNE, LOUIS: Facial Diagnosis. A. F. Reinhold, New York, 1897.
(7) OLDFIELD, JOSIAH: The Diet for Cultured People. Reprint, Herald of the Golden Age, London, 1910.
(8) OLDFIELD, JOSIAH: Fasting for Health and Life. C. W. Daniel Co., London, 1924.
(9) OLDFIELD, JOSIAH: The Dry Diet Cure. C. W. Daniel Co., London, 1924.
(10) OLDFIELD, JOSIAH: The Raisin Cure. C. W. Daniel Co., London, 1923.
(11) CHRISTIAN, EUGENE: Eat and Be Well. Eat and Get Well. A. A. Knopf, New York, 1916.
(12) FINCK, HENRY T.: Food and Flavor, a Gastronomic Guide to Health and Good Living. Harper & Bros., New York and London, 1924.
(13) FROUDE, CHARLES C.: Right Food the Right Remedy. With an Introduction by Senator Royal S. Copeland. Brentano's, New York, 1923.
(14) DEWEY, EDWARD H.: The No-Breakfast Plan. The Author, Meadville, Pa., 1900.
(15) FLOWER, SIDNEY B.: The New Thought System of Dietitics. New Thought Book Department, Chicago, 1921.
(16) STUART, ELMA: What Must I Do to Get Well, and How Can I Keep So? 32 ed. Simpkin, Marshall, Hamilton Kent & Co., Ltd., London, 1925.
(17) MOFFATT, THOMAS: Health's Improvement: Rules Comprising and Discovering the Nature, Method and Manner of Preparing all Sorts of Foods used in this Nation. Tho. Newcomb, London, 1655.
(18) HOPKINS, F. GOWLAND: The Criteria of an Efficient Diet. The Practitioner, London, vol. cxiv, 7–16, 1925.

SOME EFFECTS OF DIET ON THE BILIARY TRACT

GLOVER H. COPHER, M.D.

From the Department of Surgery, Washington University Medical School and Barnes Hospital, St. Louis, Missouri

One of the functions of the liver is the production of bile. Bile which may be considered both a secretion and an excretion is an important factor in the normal digestive processes. The most important constituents of bile for digestion are the bile salts. Bile is necessary for the complete activity of pancreatic juice. The amylolytic power of the pancreatic enzymes is doubled by the addition of bile and its fat splitting action is trebled. Bile diminishes the surface tension between aqueous and oily fluids and so allows the enzymes to act. It has the power of dissolving fatty acids.

The bile is continuously secreted by the liver and its production seems to run somewhat parallel with the secretion of pancreatic juice. Bile flows from the liver to the duodenum by way of the hepatic ducts, the cystic duct, the gallbladder and the common bile duct. It intermittently flows into the duodenum. The greatest out-pouring of bile into the duodenum is within 3 hours after the ingestion of food. The effect of diet on the secretion of bile by the liver has been studied by producing biliary fistulae in dogs. Fat seems to be the most energetic stimulant for the secretion of bile, protein next, while carbohydrates call forth very little secretion.

Between periods of digestion, bile accumulates in the gallbladder. This may be proved by cholecystography which is a means devised by Graham and Cole (1) of visualizing a gallbladder with the roentgen ray. If digestion in the stomach or duodenum is in progress after administering a phenolphthalein containing iodine (sodium tetraiodophenolphthalein) a shadow of the gallbladder cannot be obtained. The process of digestion normally allows the free out-pouring of bile, which contains iodine derived from the iodophenolphthalein, into the duodenum. If the patient is fasting, the bile is not permitted to flow into the duodenum so that it accumulates in the gallbladder and will cast a shadow on a film when exposed to the roentgen ray. This clinical method of visualizing the gallbladder in the human is fully described in articles by

Graham, Cole and Copher. The literature has been reviewed recently (2).

Copher and Kodama (3) have found as did Burget (4) that this regulation of the flow of bile from the common bile duct into the duodenum is largely due to the anatomical arrangement of the distal end of the common duct and the duodenum. A portion of the duct is surrounded by muscle fibers of the duodenal wall in such a manner as for them to act as a sphincter. This sphincter activity of the muscle fibers of the duodenum is dependent upon the tonus of the duodenum. If the tonus of the muscular wall is relaxed, bile is allowed to enter the duodenum. Bile is permitted to flow from the common duct during a relaxation phase of a peristaltic movement. This mechanism is in no way related to the sphincter of Oddi. We have found that the same mechanism controls the flow of pancreatic juice from the pancreatic duct into the duodenum.

The regulation of the flow of bile by tonus of the muscular wall may be demonstrated by drugs that produce a variation of tonus and peristaltic activity of the duodenum.

The practical application of this fact for dietetics is that food exerts a control of the flow of bile into the digestive tract. Fatty acids produce a relaxation of tonus and an increase of peristaltic movements which result in a marked reduction of pressure in the common duct with a resultant free flow of bile. Proteins and carbohydrates are not so active as fats.

The regulation of the flow of bile by the duodenum has a marked effect on the emptying and filling of the gallbladder. The filling and emptying of the gall badder has been studied by cholecystography by Copher, Kodama and Graham (5). After a patient is given a dose of sodium tetraiodophenolphthalein it is excreted by the liver with the bile. If the patient is fasting the common duct is closed and the iodine along with the bile is forced to enter the gallbladder. At this time we may obtain the first cholecystogram by exposure of the region of the gallbladder to the roentgen ray. The shadow of the gallbladder will be found to be large and not very dense. More iodine enters the gallbladder and as concentration of the contents of the gallbladder progresses its shadow becomes denser and somewhat smaller. The tendency of the pressure in the gallbladder to reach an equilibrium with the rest of the biliary tract results in a state of partial collapse of the gallbladder when concentration is at its maximum. The gallbladder is never entirely empty. If a dose of tetraiodophenolphthalein is given daily the shadow is always present.

This coincides with the fact that the gallbladder is never found empty during a laparotomy. The liver, after a few hours, has excreted all of the iodine. Bile which now enters the gallbladder does not contain iodine, so it dilutes the iodine already present in the gallbladder. The iodine is finally at such a low concentration that it will not produce a shadow. This interchange of liver and gallbladder bile is doubtless one of the important normal means by which the gallbladder is emptied.

The second method by which the gallbladder empties itself is by the contractile mechanism of its walls. This contractile power of the gallbladder is much the same as the elasticity of a rubber bag when distended. We have not been able to record a forceful contraction of the wall of the gallbladder such as takes place in the urinary bladder. The normal gall bladder is largely a passive agent dependent upon pressure changes in the biliary tract.

Changes of intra-abdominal pressure is a third and lesser means by which the gallbladder is emptied.

A fourth manner of emptying of the gallbladder is by absorption of a portion of its content through its walls. The iodine concentration in the gallbladder, when it will produce a dense shadow by exposure to the roentgen ray, is 2 or 3 times the iodine concentration of the bile coming from the liver. This concentration is accomplished by the absorption of water through the wall of the gallbladder.

Experimentally, in the dog, a rubber bag which was substituted for the gallbladder functioned in a manner very similar to that of a normal gallbladder as shown by cholecystograms. This confirms the preceding statements that the gallbladder is largely a passive agent dependent upon pressure changes in the biliary tract. This experiment, furthermore, casts considerable doubt on the contrary innervation of the gallbladder and the sphincter of Oddi described by Meltzer (6). The latter hypothesis has been applied clinically by Lyon (7) for the non-surgical drainage of the biliary tract by the introduction of a solution of magnesium sulphate into the duodenum through a tube.

Not only does diet affect the rate of secretion of bile by the liver and regulate its flow into the duodenum but it has a marked effect on the gallbladder. Boyden (8) had shown with the cat that a meal rich in fat (egg yolk and cream) produces (*a*) "A period of slow emptying (2 hours); (*b*) a collapsed or resting period marked by a re-arrangement of the mucosa (5 hours); and (*c*) a period of rapid filling and bile concentration." Protein (egg white) and carbohydrate (rice flavored with Liebig's extract)

failed to produce a marked diminution in the size of the distended gallbladder. Mixed diets produced various modification of these changes. These findings have been confirmed by Sosman, Whitaker and Edson (9) and ourselves by cholecystography in man.

Mixed foods cause a reduction in the size of the gallbladder shadow approximately 30 minutes after ingestion and is smallest after 2 hours. Fat produces the most marked reduction in the size of the shadow; peptone and meat protein, a moderate reduction; starch, very little reduction; and sugar, no reduction. A mixture of egg yolk and cream causes the most rapid reduction, with disappearance of the shadow in about 3 hours which normally requires about 24 hours.

REFERENCES

(1) Graham, E. A., and Cole, W. H.: Roentgenological examination of the gallbladder. Preliminary report of a new method utilizing the intravenous injection of tetrabromphenolphthalein. Jour. Amer. Med. Assoc., 1924, vol. 82, 613.

(2) Cole, Warren H., and Copher, Glover H.: Cholecystography. International Abstract of Surgery, January, 1926.

(3) Copher, Glover H., and Kodama, Shuichi: The regulation of the flow of bile and pancreatic juice into the duodenum. Archives of Internal Medicine (in press).

(4) Burget, G. E.: The regulation of the flow of bile. Amer. Jour. Physiol., November, 1925, vol. 74, 585.

(5) Copher, Glover H., Kodama, Shuichi, and Graham, Evarts A.: The filling and emptying of the gall bladder. The Journal of Experimental Medicine (in press).

(6) Meltzer, S. J.: The disturbance of the law of contrary innervation as a pathogenetic factor in the diseases of the bile ducts and the gall bladder. Amer. Jour. Med. Sc., 1917, vol. 153, 469.

(7) Lyon, B. B. Vincent: Non-surgical drainage of the gall tract. Philadelphia, Lea and Lebiger, 1923.

(8) Boyden, E. A.: The effect of natural food on the distension of the gall bladder, with a note on the change in pattern of the mucosa as it passes from distension to collapse. Anat. Rec., vol. 30, 333 (August), 1925.

(9) Sosman, M. C., Whitaker, L. R., and Edson, P. J.: Clinical and experimental cholecystography. Amer. Jour. Roentgenology, (December), 1925, vol. 14, 495.

THE DEPARTMENT BUDGET[1]

Report of the Administration Section, American Dietetic Association

The Nutrition Department budget is arbitrarily one of expense. It must be drawn up carefully and conscientiously on a basis of facts of past operation and in anticipation of reasonable development and expansion. Such a plan is absolutely essential if we are to have careful spending and economical operation. Since the cost of food is about one-third of the total expenses of the average hospital, every dietitian should realize her professional obligation to secure a budget for her department. In hospitals where a Master Plan is unknown and records do not permit the keeping of expense and income statistics under their respective departments, it is still possible to have a Nutrition Department budget. Its omission is an outstanding reflection upon the dietitian's knowledge of modern business methods, her lack of vision for the future of her profession and her lack of faith in the attainment of the ultimate goal.

The growing consciousness of the need for budgetary control of hospitals is of vital interest to all dietitians. Such control means that each department can be looked upon as a business in itself. The department head who is called into consultation, when her budget is arranged, has a greater opportunity of influencing the department policy and growth than one who drifts along from month to month with only the per capita and wage data as the gauge of her success. She is less apt to become buried in the mass of daily problems and necessary routine when guided by procedures planned in advance. Her interest and satisfaction in final results are sure to be greater because she can see the possibilities for future development and can determine the practicability of the proposed budget. And since she should not initiate policies of procedures which cannot be controlled, it may mean a reorganization of her responsibilities as they are now conceived in many institutions. As soon as the hospital dietitian controls the selection,

[1] Read before the annual meeting of the American Dietetic Association, Edgewater Beach Hotel, Chicago, Ill., October, 1925.

preparation and service of foodstuffs in every respect she will possess her job. Just as long as she is willing to be responsible for the rise or fall of the per capita when she has but one phase of legitimate control as menu planning and just so long as she is content with only the therapeutic work, the job will possess her. A budget is impractical unless drawn up for the department as a whole. Dietitians who are content to assume a part of their professional obligation, the therapeutic duties, are definitely hampering the development of dietetics. Dr. Malcolm T. MacEachern, Association Director, American College of Surgeons; Director of Hospital Activities, states, "Budgets should be maintained for all departments, worked out on a definite business cost for service to be rendered, and based on past experiences that are reliable for comparison." Mr. G. W. Curtis,[2] Superintendent, Santa Barbara Cottage Hospital, Santa Barbara, California, shows how the budget places responsibility upon the department head when he says, " After the affairs of each department are settled individually and you have the word of each department that their budget is sufficient, you are safe in the expenditure side of the budget, for the total expenditure budget as presented to the board of directors is backed up by the departmental totals to which your department heads have agreed."

While Mr. Frank E. Chapman,[3] Director, Mount Sinai Hospital, Cleveland, Ohio, visualizes the possibilities of the operation of a dietary budget. "Let me repeat that the establishment of the dietary budget for the month is the objective at which we should aim. This does not mean that if the calculation is incorrect, the patient would suffer by reason of a shortage of budget funds: but it does mean that if the calculation is conscientiously and intelligently made, it will establish a figure upon which may be based the performance daily, weekly, monthly and yearly of the department. Instead of a loose, disconnected, unplanned procedure, the administrative officer and dietitian may have a very definite objective to work toward."

Thus the Administration Section determined to outline the preliminary steps of analysis essential to the preparation of a department budget and to test its thoroughness with a direct application to the several hospitals represented. Seven divisions were necessary.

[2] Better Management of the Hospital Through Budget Control. Printed in the Modern Hospital, April, 1924.

[3] Accounting and Budget Control in Hospital. The Modern Hospital Year Book, 5th edition, 1925.

NUTRITION DEPARTMENT BUDGET

I. Investment
II. Maintenance
III. Foodstuffs
IV. Fixed salaries and wages
V. Travel, transportation, office expenditure
VI. Miscellaneous

It was necessary to itemize each division to assure thoroughness and adequate detail.

The first division should have proved the easiest to compile, but because of inadequate or interrelated department records kept by the hospitals appealed to, it proved the most difficult. Therefore, we are delighted with the prospects that are sure to result from the plan suggested in the 1925 Modern Hospital Year Book "Budgeting the Equipment Expenditures of the New Hospital." These statistics will furnish comparisons of expenditures made for various classes of equipment by the different types of institutions. It may also mean expense and income budgetary control for each department from the beginning.

I. Investment
  A. Complete inventory with original costs
    1. Kitchens and bakeshop
      a. Fixed equipment
      b. Small movable equipment and furniture
      c. Cooking utensils and cutlery
      d. Dish towels in circulation for the year
    2. Diet kitchen
      a. Fixed equipment
      b. Small movable equipment and furniture
      c. Cooking utensils and cutlery
      d. Dish towels in circulation for the year
    3. Serving rooms
      a. Fixed equipment
      b. Movable equipment and furniture
      c. Serving utensils and cutlery
      d. Glassware and dishes
      e. Silver
      f. Dish towles in circulation for the year
    4. Dining rooms
      a. Furniture
      b. Table linen and napkins in circulation
      c. Silence cloths

5. Office and lavatories
    a. Fixed equipment
    b. Record and file cases
    c. Furniture
    d. Stationery and weekly department supplies for the year
    e. Books and periodicals

B. Installation of new equipment that is necessary because of growth of the department and does not replace articles originally in use

C. Estimated percentage depreciation caused by wear and tear upon equipment listed under A and B.

II. Maintenance

A. Consumption of gas, coal, wood, electricity and water for the year

B. Rental

C. Renewal in fixed equipment
Renewal in small movable equipment
Renewal in silver, glass and china

D. Alterations and repairs—record of hours of estimated labor and cost of upkeep for the year

1. Weekly repairs, oiling machinery and sharpening tools
    a. Kitchens and bakeshop
    b. Diet kitchen
    c. Serving rooms
    d. Dining rooms
    e. Office and lavatories

2. Painting and installing new equipment to replace that worn out.

III. Foodstuffs—yearly average cost per capita per person per day on the basis of the itemized raw food consumption for the year. Such an analysis is of no value in totals as it makes impossible a relative comparison of the wisdom of the scientific and financial allotment.

IV. Fixed salaries and wages

V. Variable wages

VI. Transportation and current office expense. This includes expenses enroute and during the convening of the annual meeting of the American Dietetic Association as well as trips made from time to time to observe other hospital organizations before making radical departmental changes. It also includes carfare for the weekly market trips necessary for the selection of perishable supplies. Current office expense is planned to permit special observation of holidays and birthdays in therapeutic work as well as decorations, candles, etc., in the main dining rooms for Christmas and New Years.

In applying this outline to actual hospital operation, we find a lack of accounts and records reflecting the precise departmental organization

of the institution. In other words, none of the hospitals represented are operated by budgetary control. Furthermore, the collection of data in institutions lacking such organization proves a tedious and lengthy task, often involving so many other departments that many dietitians do not have the courage to face the procedure required for such a survey nor do they have the tenacity to carry it through. In fact, one of the original members of the committee felt it necessary to withdraw on this account, saying, "Even though the budget analysis requires much more work than I anticipated I would be very willing to give the necessary time to it. However, it involves so many other people I cannot see my way clear." In other cases it was because of inadequate personnel that an analysis could not be made. How may dietitians in 75 bed hospitals have any time to keep detailed accurate records, let alone to plan and organize for the future? And yet we expect them to have vision and faith in the growth of our profession when they are swamped with the daily routine. It is time that the American Dietetic Association recognized the impossibility of a sound business and scientific organization in any 75 bed hospital which provides for only one dietitian. All institutions should have accurate records of supplies received and issued. The dietitian is at fault if her personnel does not make this possible since she can secure a dependable storeman or stenographer to relieve her of the unavoidable routine, and time thus saved could be well spent in initiating new projects and perfecting the organization of the department. Henry Farquahr, Harvard School of Business, says that the essence of modern management is saving little leaks. The dietitian who does not have accurate records to show up big leaks cannot expect to know or control the small leaks. When meeting a new problem, too many dietitians are content to say "It can't be done," instead of starting out at once to solve it. Take for example the first division for the department budget, Investiment. We grant that it will be impossible to secure these data in large hospitals with their present organization without involving other departments. Hope for the future lies with the chief dietitian who merits the title, Director of Dietetics, because of her ability to initiate, develop and advance. In this case her first step would be to have an accurate physical inventory taken; her next to go down to the Kitchen Equipment House from which the fixed equipment was originally bought and with the help of the salesman learn the price of each item on her list. Of course it means work, but it is work that once having been done and filed for future

reference, will continue to serve as the skeleton for the first division of the budget. The difficulties in securing the facts required for Maintenance can also be overcome if they are attacked with initiative and determination.

The data collected by the committee prove that the suggested outline is practical, but also that there is still much work to be done before it can be perfected and can merit the approval of the executive board. We are confident that the nutrition department budget can be a most vital factor in raising the status of the hospital dietitian, and feel that nothing should be considered too difficult that will secure its ultimate effective operation.

Respectfully submitted,

ELIZABETH WHITTAKER,
State University of Iowa Hospital, Iowa City, Iowa,
LAURA E. SEIGEL,
Elliott Community Hospital, Keene, New Hampshire,
GRACE M. AUGUSTINE,
New York Orthopedic Dispensary and Hospital, New York City, New York,
QUINDARA OLIVER, *Chairman,*
Section of Administration.

THE ADJUSTMENT OF THE COLLEGE GRADUATE TO HOSPITAL WORK IN NUTRITION

AMALIA LAUTZ

The home economics student preparing for hospital work in nutrition comes to the hospital upon graduation from college. Her college education had developed her as an individual for leadership. If the student and the college are worth anything, she has learned to feel this preparation deeply and is ready to hurl herself into the waiting world with youthful enthusiasm in order to direct, admonish, reform, and tear down what she considers worthless. Her mind has been stimulated to question, wonder, and criticise constructively and destructively. She has been through an intensive period of training leading to further activity.

The nature of the home economics work done by the student, even in practical phases, has been educational rather than technical. Sources of information have been made available to her. When directions have been given, reasons have been given also. Underlying principles and theories and general methods have been stressed. The work has usually not been directly linked to the actual practical field of achievement. It was never mechanical, repetitious, or routinized. In general, work was done individually with only a few group problems.

Socially, the student at college was a member of a large, friendly, understanding group, all holding slight variations of a common aim. Imposed restrictions and rules were minimal and reduced to those concerning the barest necessities for decent living. The student body was the first consideration of the college staff. Mental and physical welfare of students were cared for and primarily considered.

Upon entering the hospital field for practical training as a student dietitian, the college graduate enters a new and alien world. The expressed aim of the hospital is the development of the best possible machinery for the care of patients. Departmental authority is jealously guarded and imposed and departmental divisions are rigid even where work overlaps. The general régime is semi-military for all but the scientific staff, that is, doctors and laboratory workers. In the nursing school, such discipline is extreme. The whole institution is, as a rule, traditional and rigidly set.

Activity can be begun only under orders or with specifically granted permission and is hampered by necessary consideration for the rest of the machine. Most orders are given without explanation to be followed with unquestioned obedience, a method which becomes habitual under the strain of dealing with matters of life and death. Perfection of technique, speed, accuracy, bulk of output are expected. Concrete, practical results must be put across day by day. Work tends to become routinized, repetitious, and mechanical.

All work of the student dietitians is performed as a small functioning part of a large machine. It is always in close touch with and dependent upon others. The personal equations of patients, cooks, superintendent, nurses, internes, visiting staff, housekeeper, social service and laboratory workers, of storekeepers, maids, porters, etc., of surgeons, medical directors, orderlies, and laundry help, etc., must be reckoned with and adjusted to.

The student lives socially in a large group divided into smaller groups sharply differentiated. She encounters the coldly impersonal or "hard-boiled" attitude unfortunately so frequently developed by those in continual contact with human suffering. She discovers the antagonism of the old for the new and runs into factional jealously and love of power. Her personal life is frequently interfered with; or at least criticized. Cap, uniform, method of hair-dressing, are prescribed. Hours of work and play, ways of living, demeanor, may be strenuously controlled.

In an adequate hospital course, the student dietitian encounters all the various phases of hospital work in nutrition such as:

1. General administrative work calling mainly for executive and business ability and the sensing of main practical issues.
2. Therapeutic diet work calling for knowledge of disease and ability to handle the sick individual.
3. Highly accurate and detailed scientific work in metabolism of laboratory character.
4. Teaching of nurses, student dietitians, and frequently patients and medical students.
5. Combinations of the above.
6. Directorships calling for knowledge of all phases and great executive ability so that all divisions can be delegated and combined under one head.

It is interesting to observe how the college graduate fits into the general hospital atmosphere and also to endeavor to determine to which type of nutritional work she is suited. One is compelled to raise the question, "Is it psychologically possible to combine any or all of the

various divisions of hospital nutrition work in one person?"—an achievement which many hospital administrators are strenously endeavoring to attain, and many hospital dietitians struggling to fulfill.

In watching the development of a fairly large group of graduates in Home Economics, both during student work and after entry into the professional field, one comes to the following conclusion: Adjustment to hospital environment is slow, incomplete, and frequently not made at all.

Students almost always incline definitely in liking and ability toward *one* phase or another of hospital nutrition work. The main point of cleavage occurs between the practical managerial and administrative side of mass food service on the one hand, and detailed scientific or therapeutic work dealing with individual patients and entailing teaching, on the other.

The following points loom into prominence and need to be definitely studied. Both professional preparation for this important field of service and organization of the field itself must be adjusted accordingly if anything worthwhile is to be accomplished in hospital nutrition.

I. The home economics college does not, as a rule, prepare students adequately for hospital work in nutrition.
   A. Technical and scientific courses are not adjusted to the hospital field and are not sufficiently thorough.
   B. The college environment unfits the student for disciplined, circumscribed, coöperative work and living especially with disinterested and antagonistic groups.

II. Ability and liking for general administrative work are seldom combined with ability and liking for detailed specialized scientific or therapeutic work or teaching, consequently the work of the hospital dietary department needs to be definitely divided.
   A. A unified dietary department in a hospital of moderate size and moderate standards can be successfully administered only by a subdivision of the dietary work into at least two phases—general administrative and clinical. The phase toward which the chief dietitian does not incline must be delegated by her to a well trained specialist, responsible for that phase.
   B. In a unified dietary department in a large hospital, or, any hospital desiring to do nutrition work of a high order, the dietary department must be divided still further into its administrative, purchasing, research, therapeutic, teaching, and social service phases, with a specialist, provided with adequate assistance, in charge of each phase, and responsible for her subdepartment to the Chief Dietitian.

A VIEW OF THE HOSPITAL DIETITIAN FROM THE NURSING STANDPOINT[1]

ELIZABETH A. GREENER, R.N.

Superintendent of Nurses, Mount Sinai Hospital, New York City

At dietitians meetings I am told, the question frequently arises: "How can dietitians in hospitals make themselves of greater value to the institution which they serve, and to the various groups with whom they are associated, especially to the nurses?"

Speaking as a Superintendent of Nurses, and viewing the situation from a nursing standpoint, I would say that as a general thing dietitians understand so little of actual hospital conditions and ward administration from either the medical or nursing standpoint, that for their own personal advantage, I believe, those who are considering hospital work should be required to spend at least six weeks on the wards, closely associated with all activities, especially those relating to nursing, in order that they may acquire some superficial knowledge of the average hospital ward, its problems and complications, its patients and their reactions, before they undertake so important a responsibility as that of the food service for the institution as a whole. During this period, they should be carefully taught and supervised in relatively the same manner that student nurses receive instruction and supervision in the diet kitchen.

Such an arrangement should go far toward bringing about in the mind of any young dietitian a better understanding of the dietary needs of a hospital. It would also give her a point of view in regard to sick patients and their needs, which can be gained in no other way than by actual contact in working with them, and association with the medical and nursing staff. The average dietitian needs to know that rules made in a diet kitchen cannot literally be applied at all times and under all conditions in a hospital ward, and that with the best of intentions on the part of everyone connected with the ward, misunderstandings and mistakes will occur.

Under existing conditions in many places, the dietitian is too far re-

[1] Read before the New York Association of Dietitians in the New York Hospital, New York City, December 14, 1925

moved from the determining point of the actual result of her labors, for in very few hospitals is the dietary force maintained in numbers sufficient to enable her to be on the hospital wards, or in the dining rooms, during the actual service of food, and thus get the reaction of those to whom the food is served.

At present, many dietitians have no way of determining the actual amount of food waste that occurs on the wards of a hospital. What appears to be a satisfactory meal sent to a ward, may not, for various reasons, be eaten or enjoyed. A busy dietitian, in an office or service kitchen at one end of the hospital, has no possible way of knowing how much of the prepared food is finding its way, almost untouched, into the garbage can on the ward. Careful food surveys or studies should, therefore, be made frequently. The actual amount of food sent to the wards, daily, for a stated period, should be measured, the amount left on plates and returned noted, and the amount that ultimately finds its way into the garbage can, also estimated. The real test of food service is the amount of cooked food actually eaten and enjoyed, together with the greatest possible elimination of waste.

A physician could not satisfactorily determine the condition of his patients or their reaction to medical treatment solely from reports or prescriptions sent out from his office. He would insist upon seeing the patient for whom he was prescribing in order to judge for himself the result of his treatment or medication. It would seem logical that dietitians apply the same idea. A dietitian responsible for teaching dietitics to student nurses, should be found part of the day on the wards of the hospital, applying by personal supervision and instruction the principles which have been taught in the classroom.

I may be wrong, but I cannot help feeling that the rank and file in hospitals have not been benefited by much of the special scientific work in metabolism, weighed and measured diets, etc., which has been developed during recent years. In other words, although I grant that thirty weighed and measured diets for thirty very ill patients is a most important matter, still, I think there is a tendency on the part of dietitians to over-emphasize the importance of this group, and to underestimate the necessity for consideration of all other groups which must be fed daily. Having wonderful scientific dietary service for twenty to thirty patients, combined with an absolutely unsatisfactory dietary service for one thousand three hundred and fifty other inmates, does not appear to be well balanced work. Here again the dietitian might

well take a lesson from the physician whose slogan is preventive medicine, and who studies the art of keeping well people well. There is no way in which people can be kept well to so great an extent as through a well balanced, properly cooked, diet. It is just as important that patients who are on regular diet in the hospital should eat well and be satisfied, as it is for the very sickest patient in the house to be properly fed, although we all grant that cases requiring exacting scientific feeding are much the most interesting.

If the dietitian is to be of the greatest possible help to all groups in the hospital, she must carefully balance her scientific, her practical, and her humanitarian point of view. This is the great lesson which physicians have learned for themselves, the great lesson which we try to teach our young student nurses, and the one which applies to the dietary staff just as to every other department of the hospital.

EDITORIAL

"Clothes Make the Man" is a slogan that everyone realizes has a modicum of truth in it. Few are endowed with that scintillating personality and wit which enables them to over-ride all standards of dress and yet dominate any sphere in which they are found. Most of us are so modestly endowed in mind and body that we must make the most of our appearance.

In the professional world this necessity of being well groomed and suitably garbed is of primary importance. Administrators have an eye for detail. They more naturally attribute efficiency and good judgment to a strictly tailored applicant than to an over-dressed, be-jeweled, be-ruffled and cosmetically adorned personage.

Why is it that one still finds in this enlightened age women who wear rings, bracelets and fancy jewelry with uniforms? Why does not their observation and education include a knowledge of the fact that colored shoes and hosiery do not jibe with white uniforms, that high heeled shoes have no place in professional garb, that excessively short dresses are just as repugnant as frills?

Colleges and universities are blamed for inadequate training in English grammar. Perhaps they cannot so easily be censored for errors in taste as well. If emphasis could somehow be laid in early years of training upon the more subtle niceties of personal appearance, the professional world might create a standard of good taste and propriety which would be a model for all.

M. H. C.

CURRENT LITERATURE

American Journal of Diseases of Children:

April, 1926.

P. 496. The respiratory metabolism in infancy and childhood. III. Glycogen storage in children. Samuel Z. Levine, M.D., James R. Wilson, M.D., and Helen Rivkin, M.A.

May, 1926.

P. 603. The prevention of rickets. May G. Wilson, M.D.

P. 668. Influence of acidified milk on duodenal function in infants. Lloyd Arnold, M.D.

American Journal of Physiology:

April, 1926.

P. 237. Nutritive value of various layers of wheat and corn kernel. Aneila Klein, Benjamin Harrow, Louis Pine, and Casimir Funk.

P. 265. Egg yolk as source of antiscorbutic vitamin. J. E. Dougherty.

P. 316. Hydrogenated vegetable oil as a source of vitamin E. Cornelia Kennedy, and Leroy S. Palmer.

P. 325. Diet in relation to reproduction and rearing of young.

P. 339. Observation on existence of vitamin E. V. E. Nelson, R. L. Jones, V. G. Heller, T. B. Parks and E. I. Fulmer.

June, 1926.

P. 24. On source of vitamin B in nature. Montrose T. Burrows and Louis H. Jorstad.

P. 38. On source of vitamin A in nature. Montrose T. Burrows and Louis H. Jorstad.

P. 140. Experimental study of low ash feeding on growth of the albino mouse in subsequent periods on a complete dietary. Helen B. Thompson.

P. 192. Value of egg yolk in supplementing diets deficient in calcium. Ernest Tso.

American Journal of Public Health:

April, 1926.

P. 374. Dairy products and eggs.

P. 381. Light and health. Emery R. Hayhurst, M.D.

June, 1926.

P. 597. B. coli in market oysters. Fred O. Tonney, M.D. and John L. White, M.D.

Archives of Disease in Childhood (British):

February, 1926.

P. 30. Incidence of rickets in a London hospital. Helen Mackay, M.D.

April, 1926.

P. 103. Nephritis in children and its prognosis. Donald Patterson, M. D., and W. G. Wyllie, M.D.

Archives of Internal Medicine:

April, 1926.

P. 550. The therapeutic use of diets low in water and in mineral content. Norman M. Keith, M.D., Florence H. Smith, B.S. and Mary Whelan, M.A.

May, 1926.

P. 674. Gastric secretion in diabetes mellitus. Byron D. Bowen and A. H. Aaron.

June, 1926.

P. 861. Seasonal variation in onset of acute diabetes. S. Franklin Adams, M.D.

Archives of Pediatrics:

April, 1926.

P. 251. Actinotherapy in pediatrics. J. H. Gettinger, M.D.

P. —. Feeding of the new born. John F. Sinclair, M.D.

May, 1926.

P. 303. Breast milk concentrated by dehydration. J. R. Thompson, M.D.

Canadian Medical Association Journal:

March, 1926.

P. 221. An address on diabetes and insulin. Frederick O. Banting, M.D.

P. 251. Studies in pernicious anemia. II. Chloride metabolism in the anemias. Margaret G. Rioch, M.D. and A. T. Cameron, M.A.

June, 1926.

P. 638. A simple and accurate method of determining basal metabolic rates. I. M. Rabinowitch and Eleanor V. Bazin.

Hospital Managemen:

April, 1926.

P. 80. Developing dietary sales. Ellard S. Slock.

P. 82. Orange juice as nutrient.

May, 1926.

P. 80. Factors in food waste.

June, 1926.

P. 51. How a 950-bed tuberculosis hospital handles its food source. John F. Berry.

P. 80. Buying glassware for hospitals.

Journal of American Medical Association:

April 3, 1926.

P. 1075. Iron and blood regeneration.

April 24, 1926.

P. 1288. Salivary digestion in stomach.

May 1, 1926.

P. 1334. Iodized salt in prevention of goiter. C. L. Hartsock, M.D.

P. 1339. Salmon in diet for the prophylaxis of goiter. Norman D. Jarvis, M.S., Ray W. Clough, Ph.D. and Ernest D. Clark, Ph.D.

May 8, 1926.

P. 1417. Glucose and insulin in the treatment of the vomiting of pregnancy. E. L. King, M.D.

May 22, 1926.

P. 1626. Unwarranted therapeutic hopes. Nephritis and nutrition.

May 29, 1926.

P. 1699. Light and effects of vitamin A.

June 5, 1926.

P. 1770. Diet and hypertension in renal insufficiency.

June 19, 1926.

P. 1903. Diabetic coma and insulin. Lewis Fox Frissell, M.D. and Joseph Hajek, M.D.

P. 1913. Water: Enough more or less.

P. ——. Limitation of cod liver oil in rickets.

Journal of Biological Chemistry:

April, 1926.

P. 15. The minimum endogenous nitrogen metabolism. Willard Smith.

P. 165. Does the addition of sodium chloride increase the value of a corn ration for growing animals? H. H. Mitchell and G. G. Carman.

P. 183. Biological value of the nitrogen of mixtures of patent white flour and animal foods. H. H. Mitchell and G. G. Carman.

May, 1926.

P. 295. Magnesium metabolism on purified diets. Grace Medes.

P. 475. Studies in carbohydrate metabolism. Christian Lundsgaard and Svend Aage Holbel.

June, 1926.

P. 499. Solubility of vitamin B in benzene. R. R. Williams and R. L. Waterman.

P. 665. Vitamin E and reproduction on synthetic and milk diets. H. A. Mattill and M. M. Clayton.

P. 769. Can purines, creatinine or creatine replace histidine in the diet for purposes of growth? Gerald J. Cox and Wm. C. Rose.

P. 821. Antiricketic substances. Charles E. Bills and Francis G. McDonald.

Modern Hospital:

April, 1926.

P. 376. The dietarium idea. Lenore Vinger.

May, 1926.

P. 468. Is instinct a guide to food. Benjamin Harrow and Casimir Funk.

June, 1926.

P. 542. Outline of course in food and dietetics for student nurses.

P. 544. Making candy for the diabetic. Israel S. Kleiner and Estelle Barker.

BOOK REVIEWS

TALKS TO NURSES ON DIETETICS AND DIETOTHERAPY. By Ruth Wheeler and Helen Wheeler. (Philadelphia, W. B. Saunders & Co., 1926.)

Every dietitian interested in the teaching of nurses will welcome this little book as a valuable aid in her work. It is written by a recognized authority in the field of nutrition—the president of the American Dietetic Association—and her sister. They so successfully combine scientific accuracy with clearness of expression that for the lay person wishing an elementary knowledge of dietetics this book is not excelled. The subject matter is taken up in an orderly fashion, beginning with the classes and functions of food, followed by a discussion of the normal diets for infants, children, adults, and the nurse herself. Next corrective diets are considered, together with such general conditions as infections and diseases of the circulatory system. Normal digestion and dietotherapy in diseases of the gastro-intestinal tract are reviewed in the next chapter, while a discussion of normal metabolism and dietotherapy in diseases of metabolism and excretion as anemia, gout, diabetes, and nephritis, conclude the book. Several valuable tables of food analysis, energy requirement in different conditions, and height-age-weight charts are included.

A brief review of its contents does not give its most valuable and unusual points. There are no diet lists to be laboriously learned, and but few are given as examples. The authors do give the fundamental principles involved, so that the nurse confronted by a new set of conditions as nearly each patient presents, will not be entirely lost. Throughout the book, in the course on the discussions are found practical questions which aid in stimulating the student's mind and in correlating her study with her work on the wards. As is stated in the preface, the book has for its object "to furnish an outline for study for the nurse which should enable her, by intelligent attention to her own diet and to that of her patients to attain a greater efficiency both personal and professional."

E. J. M.

LECTURES ON NUTRITION. (Philadelphia, W. B. Saunders Company, 1925.) Pp. 243. $2.50.

A series of six lectures delivered in 1924–25, under the auspices of the Mayo Foundation for Medical Education and Research. They were presented at the following institutions: Medical School of Universities of Wisconsin, Nebraska and Washington (St. Louis), the graduate schools of the University of Minnesota and the University of Iowa, the Des Moines Academy of Medicine and also at Rochester under the auspices of the Mayo Foundation and the local chapter of Sigma Xi. The subjects of the lectures and the authors are: The measurement and significance of basal metabolism, Francis, Gano Benedict; Problems of metabolism, Graham Lusk; The proportions in which protein, fat and carbohydrate are metabolized in disease, Eugene Floyd DuBois; Muscular activity and carbohydrate metabolism, Archibald Vivian Hill; Our present knowledge of the vitamins, E. V. McCollum; The relations between fertility and nutrition, Herbert McLean Evans.

The lecturers are among the most fruitful research workers in the field of nutrition who are active at the present time. One small book that brings to the busy dietitian recent messages from six authorities in her field cannot fail to be gratefully received. The fact that the lectures were presented primarily to the medical profession and to undergraduates in medicine indicates that the specific subjects discussed are those that are significant in the diagnosis and treatment of disease. The technique of tests that are conducted in the medical laboratory receives much attention.

E. I. R.

ASSOCIATION NEWS

NINTH ANNUAL MEETING OF THE AMERICAN DIETETICS ASSOCIATION

Ambassador Hotel, Atlantic City, New Jersey, October 11, 12, 13 and 14

TENTATIVE PROGRAM

Monday, October 11

9:00 a.m.—REGISTRATION.

10:00 a.m.—GENERAL SESSION—Ruth Wheeler, President, presiding.

Presidential Address—Ruth Wheeler.

General Financial Problems in the Endowed and Municipal Hospitals.

The Rôle of the Dietitian in Planning the New Hospital.

The Hospital from a Business Standpoint.

12:00 Noon—LUNCHEON.

Reports and greetings from the field.

2:00 p.m.—GENERAL SESSION—Ruth Wheeler, presiding.

Business Meeting.

Journal.

Placement.

New Business.

Election of officers.

4:30 p.m.—TEA.

6:00 p.m.—GENERAL SESSION BANQUET MEETING—Dr. Ruth Wheeler presiding.
Advancement in the Basic Sciences.
Physiology—Dr. J. J. R. Macleod, University of Toronto.
Chemistry.
Economics—Raymond Pearl, Johns Hopkins University.

October 12

8:30 a.m.—REGISTRATION.
9:30 a.m.—ADMINISTRATIVE SECTION—Elva George, presiding.
Budgeting.
New Equipment and New Utensil Material.
Report of Committee.
Food from the Standpoint of Food Control—Control Chemist—Dr. F. C. Blanck, Food Control Laboratory Bureau of Chemistry, Washington, D. C.
Cooked Food Standards, How to Establish and How to Maintain Them.
12:00 Noon—LUNCHEON.
2:30 p.m.—GENERAL SESSION—Octavia Hall Smiley.
Teeth and Diet.
Our Present Knowledge of Rickets.
Diabetes in Children.
8:00 p.m.—GENERAL SESSION—Lulu Graves, presiding.
Management of Personnel—Dr. A. F. Payne, Department of Industrial Relations, Curtis, Fosdick & Balknap, 61 Broadway, New York, N. Y.
Food Problems from the Psychiatrist's Viewpoint.

October 13

8:30 a.m.—REGISTRATION.
9:30 a.m.—EDUCATION SESSION—Eva Thallman.
Bedside Teaching of Student Nurses—Miss Helen J. Hubbell.
Recommendations for College Course for Student Dietitians.
10:00 a.m.—SOCIAL SERVICE SECTION—Rachael Sanders, presiding.
Nutrition in the Nursery School
Nutrition in the Health Clinic, Bertha Edards, Harlem Health Center, N. Y. City.
Report of the Section—clinic and follow-up methods.
12:00 Noon—LUNCHEON.
2:30p.m.—THERAPEUTIC SECTION—Martha Davis, presiding.
High Protein without Meat in Nephrosis—Fairfax Proudfit, Consulting Dietitian, Nashville, Tennessee.
Protein Utilization in Skeletal Tuberculosis—Elizabeth Whittacker, Michigan Agricultural College, East Lansing, Michigan.
Specific Dynamic Action of Protein in Obesity—Mary Harrington, University of Michigan Hospital, Ann Arbor, Michigan.
Some Studies of Protein in Hyperthyroidism—Martha Davis, Scripps Metabolic Clinic, La Jolla, California.
Protein Requirement in Children—Walter M. Bartlett, Boston, Massachusetts.
8:00 p.m.—A Survey of Nutrition.

October 14

With the aid of the local chairman in each city, trips to New York, Philadelphia, Baltimore and Washington, have been planned. These cities offer much of professional interest to the dietitian.

NEWS NOTES

The St. Louis Dietetic Association for its June meeting made a trip to Ridge Farm, the Convalescent Home of the St. Louis Children's Hospital. The Farm believes in Rollier's sunshine treatment. From early Spring until late Fall the children are exposed to the sun's rays.

Miss Nellie Sailor, former student dietitian at Barnes Hospital has gone to the Presbyterian Hospital in Chicago to be an Assistant in the Dietary Department.

Miss Ruth Megchelson formerly of Santa Barbara, California, is to be a second Assistant Dietitian at the Jewish Hospital of St. Louis. Miss Ruth Cooley has been Chief Dietitian for five years. Miss Betty Ryan has been the first Assistant for two years.

The New Jewish Hospital of St. Louis was opened to patients May 20, 1926. This Hospital is equipped for 295 patients. Each patient's room contains a radio, running ice-water and private lavatory. The equipment over the entire hospital is of the latest date. The kitchens and dining-rooms are especially arranged for central service to patients and cafeteria service to Nurses and Employees. An interesting feature of the New Hospital is a Kosher kitchen which prepares food for the orthodox Jews. An average of from 30 to 40 trays from this kitchen has been made since its opening.

DIETITIANS OF CALIFORNIA HOLD FIRST ANNUAL CONVENTION

The Hotel Oakland, Oakland, April 29 and 30, was the scene of the first convention of the California State Dietetic Association. About fifty members from all parts of the state were in attendance and the foundation for a strong organization was laid.

The Association was organized at Fresno, California, on October 31 of last year. At that time the constitution and by-laws were drawn up and the following officers elected to direct the work until the 1927 convention:

President: Helen B. Anderson, Methodist Hospital of Southern California, Los Angeles, Calif.

First Vice-President: Alvina Misch, University of California Hospital, San Francisco, Calif.

Second Vice-President: Ruth H. Bowden, Cottage Hospital, Santa Barbara, Calif.

Secretary: Martha E. Davis, Scripps Metabolic Clinic, La Jolla, Calif.

Treasurer: Mrs. Rae Snow Schneider, Alameda County Hospital.

At the first general session of the convention Dr. W. D. Sansum of the Potter Metabolic Clinic, Santa Barbara, spoke on "Safe Reducing Diets." His principal recommendation for reducing might be summed up thus: Cut down the fat in the diet and walk strenuously. This talk stimulated considerable discussion. "Planning and Equipping of Hospital Kitchens" was the subject of the talk by Dr. Broderick, Director of Hospitals in Alameda County. This served as an excellent introduction to the tour of the Highland Hospital (the new Alameda County Hospital) which he conducted in the afternoon. Mr. S. E. Crichton presented an interesting paper on the advantages gained by a large commercial organization, such as the Pacific Telephone and Telegraph Co., through standardization of recipes and service in its cafeterias.

At the luncheon April 29 Anne C. Jamme of the Bureau for Nurses Registration spoke on state registration for dietitians. Her talk was very stimulating and of vital interest to dietitians.

On the second day Dr. Agnes Fay Morgan presented an interesting paper on "Mineral Metabolism" and Dr. William H. Leake of Los Angeles discussed "Insulin and Diabetic Diets."

The California State Medical Association very generously extended to the dietitians the privilege of attending all meetings of their

convention, which also was in session at the Hotel Oakland the last week of April. This courtesy was very much appreciated.

Beside the more formal sessions of both organizations, in which the acquisition of subject matter was the goal, the dietitians also enjoyed the banquet of the State Medical Association and their own informal get-together dinner at the Women's Faculty Club on the University of California campus at Berkeley. The contacts made during these social affairs were of untold value to the dietitians and should help in the building of a true coöperative spirit in this state, where the local groups are so widely separated.

One of the outstanding pieces of work being done by the dietitians of the state is the "Compilation of Diets." This looseleaf book contains the most recent work on therapeutic diets, not found in other publications, and is being kept up to date by the Dietotherapy committee, which reported its progress at the convention.

During the coming year the California State Dietetic Association plans to work for state registration of dietitians, for increased membership in the state association, for the improvement of student courses, and the placing of student dietitians. In all of its undertakings it will, of course, work in harmony with the national organization and thereby strengthen the position of dietitians all over the country.

Alice Bollerud, after completing a year's work at the University of Wisconsin, is now at her home in Hollandale, Wisc.

Mary de Garmo Bryan has been spending some time at the home of her mother in St. Louis.

Rebecca Counts has returned from spending the winter in California and may be reached at her home in Chillicothe, Ohio.

Hazel Dunlap has resigned her position at Jefferson Hospital as she found it necessary to return to her home in St. Johns, N.B., Canada.

Margaret Craig has left the Swedish Mission Hospital at Omaha and is at the present time in Denver, Colo.

Alberta Dent is attending Cornell University, working towards her M.S. degree.

Katherine L. Foster, formerly of the Orphan Asylum of Troy, New York, is now at the Leake and Watts Home School, Yonkers, New York, where she is dietitian.

A number of the dietitians are traveling in Europe this year. Those we know are: Fanny Sicher, Elva George, Anna Laird and Amalia Lautz.

Hilda A. French writes us that she is now head dietitian at the New England Deaconess Hospital, Boston, Mass.

Mrs. Matilda Hall, formerly of Warren, Pa., is to be located for some time at 930 S. 30th St., Birmingham, Ala.

Katherine W. Harris left the Ohio State University, July 1st. She did not state where she was going. Dorothy Newton, who has been her assistant, has taken her place.

Ada M. Field has resigned her position at Peabody College. Her present address is: Apt. 53, 195 Claremont Avenue, New York City.

Louise Yeomans Gilbert, formerly of Cook County Hospital, Chicago, is substituting at the Presbyterian Hospital during a leave of absence of one of the dietitians.

Hazel Nelson has left Mercy Hospital, Janesville, Wisconsin, to go to the Wesley Hospital, Chicago, where she is to work with Elizabeth Tuft.

Octavia Hall Smillie has moved from Jackson Heights, Long Island, and is now located at 20 Circle Drive, Hastings-On-The-Hudson, New York.

Greta L. Kneer is now assistant Cafeteria Director at the Y. W. C. A. at Nashville, Tenn.

Julia A. Lingenfelder has gone to Gasconade, Mo. She was formerly at the Citizens General Hospital, New Kensington, Pa.

Victoria Abramson is spending some time at the home of her parents, Chippewa Falls, Wisc.

Ethel Pipes has left Tacoma General Hospital to go to the Vancouver General Hospital, Vancouver, B.C., Canada.

Mary L. Sedgwick is planning to spend some time in study at Iowa State College.

MARRIAGES

Lenore Weber to Dr. Granville Allison Bennett, at Keokuk, Iowa, on May the fifteenth. At home, Burkley Place, Iowa City, Iowa.

Winifred Short to Dr. Daniel Loyd Williams, on May the twenty-second. At home, U. S. Veterans' Hospital, Rutland, Mass.

Louise Holdman to Dr. Withers. At home, 1912 Canal Street, New Orleans, La.

ADDRESSES FROM WHICH MAIL HAS BEEN RETURNED

The Executive Secretary will be grateful for corrections

Applegate, Dortha.....Fair Oaks Villa, Cuyahoga Falls, Ohio.
DeVore, Laoma M.....Riverton Sanatorium, Seattle, Wash.
French, Henrietta.....Lake Placid Club, Essex County, N. Y.
Galloway, Mrs. Hazel Winders.....2400 Grand Ave., Apt. H., Milwaukee, Wisc.
Hopper, Margaret.....Hamilton General Hosp., Hamilton, Ont., Can.
Kerr, Evaline.....Letterman General Hosp., San Francisco, Cal.
Lawler, John.....210 E. 23rd St., New York City.
Pontz, Bess.....175 Lexington Ave., care of Chiselbro, New York City.
Poor, Marguerite.....State Hosp., Howard, N. J.
Schapiro, Mrs. Mary.....416 W. 122nd St., New York City.
Smith, Clara.....3 Russian Hill Place, San Francisco, Calif.
West, Florence E.....Missouri Pacific Hosp., St. Louis, Mo.

NEW MEMBERS

(March, April, May, June)

Ames, Lennice E.....U. S. Veterans' Hosp. No. 65, St. Paul, Minn.
Aschenbrener, Mary E.....Station Hospital, Fort Sam Houston, Texas.
Ashley, Bertha B.....Elk County General Hosp., Ridgway, Pa.
Bateson, Florence E.....Johns Hopkins Hosp., Baltimore, Md.
Beels, F. Helen.....Warren General Hosp., Warren, Pa.
Berfield, Doris.....Allen Memorial Hosp., Waterloo, Iowa.
Biltz, Bertha J.....1711 Cherry St., Toledo Hosp., Toledo, Ohio.
Bollerud, Alice.....Hollandale, Wisconsin.
Boswell, Helen F.....Army and Navy Hospital, Hot Springs, Ark.
Boyd, Ruth T.....Royal Victoria Hosp., Montreal, Canada.
Brieman, Melanie C.....Victory Memorial Hosp., Waukegan, Wisc.
Brooks, Helena.....Devereaux Mansion, Marblehead, Mass.
Brookshier, Mary.....College Commons, Pullman, Wash.
Brown, Lillie Kate.....Piedmont Hosp., Atlanta, Ga.
Bruner, Margaret E.....Butler College, Indianapolis, Ind.
Burnan, Sophy M.....Rapid River, Mich.
Burr, Grace R.....Homeopathic Hosp., Rochester, N. Y.
Cantrell, Agnes A. (Associate).....Piedmont Hosp., Atlanta, Ga.
Castle, Gladys.....6337 Harvard Ave., Chicago, Ill.
Christie, Dorothy McL.....Fairview Park Hosp., Cleveland, Ohio.
Colburn, Evelyn C. (Associate).....St. Mary's Hosp., Rochester, Minn.
Colton, S. Trevor.....Union Memorial Hosp., Baltimore, Md.
Compton, Edna P.....Walter Reed General Hosp., Washington, D. C.
Courtright, Marie.....Visiting Nurse Ass'n, Omaha, Nebr.
Cowherd, Florence McM. (Associate).Walter Reed General Hosp., Washington, D. C.
Cowles, Ruth C.....Girls Trade School, Worcester, Mass.
Cramp, Dr. Arthur J.....535 N. Dearborn St., Chicago, Ill.
Currie, Isabel MacNeil.....Missouri Baptist Sanitarium, St. Louis, Mo.

Dizard, Florence.....Michigan Dept. of Health, Lansing, Mich.
Dunlap, Hazel S.....180 King St. E., Saint John, N. B., Can.
Dustin, Eleanor I.....Chicago Lying-In Hosp., Chicago, Ill.
Edwards, Elizabeth C.....Davis Fisher Sanitarium, Atlanta, Ga.
Enders, Katherine.....Lakeview Hospital, Danville, Ill.
English, Agnes M. (Associate).....R. R. No. 5, Box 155, Greeley, Colo.
Evangeline, Sister Mary.....Rosary College, River Forest, Ill.
Faville, Laura E.....Broome County Chapter American Red Cross, Binghamton, N. Y.
Fisher, Emelie B.....Rush Hospital, Philadelphia, Pa.
Flye, Mildred A.....Rutland Hosp., Rutland, Vt.
French, Hilda A.....State Infirmary, Tewksbury, Mass.
French, Marion E.....127 Broadway, Boston, Mass.
Fuchs, Emma.....University Hosp., Oklahoma City, Okla.
Gaffney, Katherine M.....Clarkson Memorial Hosp., Omaha, Nebr.
Gardner, Maude.....Flower Hosp., Toledo, Ohio.
Given, Meta H.....6037 Kimbark Ave., Chicago, Ill.
Glendenning, I. B.....U. S. Marine Hosp., No. 82, Norfolk, Va.
Gray, Cora E.....419 W. 118th St., New York City.
Gwaltney, Mrs. Helen.....St. Mary's Hosp., Grand Rapids, Mich.
Hall, Margaret A.....Battle Creek Sanitarium, Battle Creek, Mich.
Haskell, Lillian.....Jonesville, Mich.
Hatfield, Mrs. Magdalen Weber.....Evanston Hospital, Evanston, Ill.
Hawks, Jean E.....10612 S. Hoyne Ave., Chicago, Ill.
Henry, Clara E. (Associate).....8 W. 16th St., New York City.
Herendeen, Jane E.....Clifton Springs Sanitarium, Clifton Springs, N. Y.
Hubbard, Andree (Associate).....983 Collinswood Ave., Akron, Ohio.
Huntington, Beatrice J.....St. John's Long Island City Hosp., Long Island City, L. I.
Jackson, Hazel F.....Hillsview Farms, Washington, Pa.
Jacques, Evangeline.....5 Winslow St., Worcester, Mass.
Johnson, Esther K.....Hurley Hospital, Flint, Mich.
Kaercher, Zeta M.....Milbank, South Dakota.
Kearney, Blanche M.....University Hosp., Minneapolis, Minn.
Krug, Katherine.....St. Luke's Hosp., Bethlehem, Pa.
Lacy, Mary.....General Hosp., Rochester, N. Y.
Langley, Alice C.....Y. W. C. A., Edmonton, Alta,. Canada.
Lauger, Bertha B.....408 N. Main St., Mt. Pleasant, Iowa.
Ledger, Marie C.....Alliance City Hosp., Alliance, Ohio.
Lingenfelder, Julia A.....Gasconade, Mo.
Longworth, Eunice.....University Hospital, Iowa City, Iowa.
Love, F. G.....City Hosp., St. Louis, Mo.
Lowell, Sarah M.....Post Graduate Hosp., New York City.
McLay, Mary E.....Presbyterian Hosp., Pittsburgh, Pa.
MacDonald, Elizabeth.....Boston City Hosp., Boston, Mass.
MacLachlan, Mable.....University Hosp., Ann Arbor, Mich.
Magee, Grace.....2412 Knapp St., Ames, Iowa.
Marshall, Mrs. Martha Watter.....1323 S. Ruby St., Philadelphia, Pa.
Martin, Carrie H.....St. Mary's Hosp., Evansville, Ind.
Martin, R. Marjorie.....Nurses' Home, Womens' Hosp., Baltimore, Md.
Marty, Louise M.....916 E. 15th St., Minneapolis, Minn.

Maugun, Mrs. Savilla Wenger.....General Hosp., Kansas City, Mo.
Megeath, Metta M. (Associate).....288 Palisade Ave., Yonkers, N. Y.
Miller, Caroline Z.....35 Ross St., Williamsport, Pa.
Moon, Gladys S.....127 Broadway, Boston, Mass.
Moore, Alice M.....Clifton Springs Sanitarium, Clifton Springs, N. Y.
Morgan, Agnes Fay.....University of California, Berkeley, Calif.
Munro, Helen S.....Rhode Island Hosp., Providence, R. I.
Myers, Irene M. (Associate).....525 S. Monroe St., Decatur, Ill.
Nelson, Beatrice E. (Associate).....Walter Reed General Hosp., Washington, D. C.
Nicoll, Dorothea.....Medfield State Hosp., Harding, Mass.
Northrop, Mary W.....Montefiore Hosp., New York City.
Orr, Margaret D.....College Apts. No. 2, Rochester, Minn.
Ostrander, Ruth E.....Long Beach Community Hosp., Long Beach, Cal.
Palmer, Catharine L.....Camp Wipigaki, Lac du Flambeau, Wisc.
Partherner, Dorothy W.....General Hospital, Lancaster, Pa.
Patrick, Mabel.....University of Alberta, Edmonto, Alberta, Can.
Patterson, Alberta.....Box 472, Tallahassee, Fla.
Penwarden, Annie E.....Boston City Hosp., Boston, Mass.
Perkins, Hope.....Philipsburg State Hosp., Philipsburg, Pa.
Quick, Minnie Boyce.....Y. W. C. A., Reading, Pa.
Reuman, Frieda.....Bridgeport Hosp., Bridgeport, Conn.
Richardson, E. Pauline.....University Hosp., Augusta, Ga.
Richardson, Helen.....Walter Reed General Hosp., Washington, D. C.
Richter, Rose.....Baylor University Hosp., Dallas, Texas.
Robinson, Helena M.....Cleveland Clinic Hosp., Cleveland, Ohio.
Robson, Mrs. Barbara Reid.....507 Montgomery St., San Francisco, Calif.
Rowntree, Jennie.....University of Washington, Seattle, Wash.
Sanders, A. Pauline.....Seton Hill College, Greensburgh, Pa.
Scott, Irma F.....719–739 Carondolet St., New Orleans, La.
Smathers, Dorothy R.....4414 N. Broad St., Philadelphia, Pa.
Smith, Annie J.....Willard Hall, Evanston, Ill.
Smith, Mary Elizabeth.....3210 Duval St., Austin, Texas.
Spitz, Gertrude T.....3 Easton St., Brookline, Mass.
Stevenson, Ina M.....Miller Hosp., St. Paul, Minn.
Tierney, Eleanor A.....Cincinnati General Hosp., Cincinnati, Ohio.
Tilton, Edith R.....Barnes Hosp., St. Louis, Mo.
Travis, Constance.....Oil City Hosp., Oil City, Pa.
Treen, Pearl E.....Oak Forest Tuberculosis Hosp., Oak Forest, Ill.
Tupper, Frieda.....Goddard Hosp., Brockton, Mass.
Wickert, Helen V. (Associate).....201 E. Main St., Danville, Ill.
Witmer, Grace.....Newport Hosp., Newport, R. I.
Yon, Marie.....Walter Reed General Hosp., Washington, D. C.
Young. Alice L.....Boston City Hosp., Boston, Mass.